A

SUPPLEMENT

TO THE

PHARMACOPŒIA.

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A

SUPPLEMENT

TO THE

PHARMACOPŒIA:

BEING A CONCISE BUT COMPREHENSIVE

DISPENSATORY,

AND

MANUAL OF FACTS AND FORMULÆ,

FOR THE USE OF PRACTITIONERS IN MEDICINE AND PHARMACY.

BY

THEOPHILUS REDWOOD, PH. D.

PROFESSOR OF CHEMISTRY AND PHARMACY TO THE PHARMACEUTICAL SOCIETY OF GREAT BRITAIN, AND SECRETARY TO THE CHEMICAL SOCIETY.

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PREFACE.

I UNDERTOOK, in 1844, to edit an edition of *Gray's Supplement to the Pharmacopœia*, a book which had for many years been in extensive circulation, and the demand for which continued after the death of the author. In the prosecution of this undertaking it was found necessary to make considerable alterations in the matter and arrangement of the work, in order to reconcile it with the existing state of knowledge, and to adapt it to the altered circumstances of the class of readers for whom it was principally designed. These changes gave to the book an entirely new character.

The original intention of Mr. Gray, as expressed in the preface to the first edition of his *Supplement*, published in 1818, was, "to give a concise account of the actual state of our knowledge of drugs in general, using that term in its most extensive signification, as including not only those natural substances and compounds which are employed by physicians and private practitioners of medicine, but those other substances and compounds which, from their analogy to these, are usually sold by the same retailers as sell medicines, for the purpose of being used as dyes, paints, perfumes, cosmetics, liqueurs, &c.; and upon this account the work appears under the title of *A Supplement to the Pharmacopœia*, as that book contains only the medicines in use at present with the physicians of London and its environs. Still, however, the medicines form the greater bulk of the work, from the vast variety of them that are employed in different places."

Adopting the design expressed in the above quotation, and using so much of the matter of *Gray's Supplement* as I considered useful, yet omitting much, and adding still more, this work was

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produced in 1847, and another edition of it, with much new matter, in 1848. In those editions the title of *Gray's Supplement to the Pharmacopœia* was used; but the work having now, for the third time, been submitted to revision, and no part of what originally constituted *Gray's Supplement* being retained, excepting such facts as are acknowledged in common with those taken from other sources, Mr. Gray's name is omitted from the title-page.

In the introduction of new matter, pains have been taken to extend as far as possible the brief notices of natural products, derived from the animal and vegetable kingdoms, with the view of comprising all those substances whose applications in medicine, domestic economy, and the arts, have been described by authors.

The part of the work which treats of "animals yielding products employed in medicine," &c., contains a notice of about three hundred animals, which are arranged according to Cuvier's classification. Some of the characters, the habitations, food, and useful products of these are briefly described, and an outline of Cuvier's classification of the animal kingdom, with some allusions to modifications of it adopted by other naturalists, is given.

Among the "vegetables yielding products employed in medicine," &c., are included about three thousand plants. These are arranged after De Candolle's classification, and reference is given, for all the genera, to the *Prodromus* (De Cand.), or *Botanicon Gallicum* (De Cand. Bot. Gal.) of that author; to *Endlicher's Genera Plantarum* (Endl. Gen. Pl.); to *Smith and Hooker's English Flora* (Smith Eng. Fl.); or to *Lindley's Works* (Lindl. or L.). Reference is also frequently made to *Sowerby's English Botany* (E. B.), where drawings of the plants may be found. Those plants which grow wild in this country are distinguished by having an asterisk (*) prefixed to the name; and those which are commonly cultivated in this country, but are not natives, are distinguished by two asterisks (* *). The habitat of nearly every plant is given, and to those which grow in this country, the period of inflorescence and colour of the flowers are also added. The notices of the applications and uses of the plants or their

products are necessarily brief, in accordance with the scope and purpose of the work; they are generally given on the authority of the writers to whom reference is made, by the letters G. (Gray), L. (Lindley), O'Sh. (O'Shaughnessy), Loud. (Loudon), or, in other cases, by the name in full.

The last part of the work comprehends the formulæ for the preparation of compounds employed in medicine, domestic economy, and the arts, together with mineral substances, and some animal and vegetable products. Besides all the formulæ of the three British Pharmacopœias, a selection is here given from the foreign Pharmacopœias of various parts of the world, with the view of comprising such authorised processes as are most likely to prove useful to the prescriber or dispenser of medicines in this country. The sources from whence these formulæ have been taken are distinctly specified, including the dates of the Pharmacopœias, so that by reference to the historical account of those works, in the first part of the book, the dispenser of medicines may ascertain whether they are still in authority, and what the country or district is to which they relate. But the value of these formulæ is not, in all cases, confined to the aid afforded to the pharmaceutist in dispensing prescriptions; many of them are for processes the products of which are similar to, or identical with, those ordered in our own Pharmacopœias; yet, the instructions being different, they may be advantageously referred to by the manufacturer, the scientific inquirer, and those engaged in framing new Pharmacopœias. There are also a great number of formulæ, derived from different sources but not authorised by any Pharmacopœia, for the preparation of medicinal and other substances which are either sold or applied by those for whose use the book is intended.

T. R.

19 *Montague Street, Russell Square,*

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A

SUPPLEMENT TO THE PHARMACOPŒIA,

ETC.

PHARMACOPŒIAS AND DISPENSATORIES.

When physicians ceased to prepare the medicines which they prescribed for their patients, and pharmacy became, to a certain extent, a distinct profession or business, it was necessary that some authorized standards should be fixed upon, by which to determine the meaning and value of the terms employed in extemporaneous prescriptions. Hence the origin of Pharmacopœias. These works emanate from that portion of the medical profession which consists of prescribers of medicines—in this country, the Colleges of Physicians. They contain descriptive notices of the medicines employed by medical men, together with formulæ for those compounds which admit of being kept ready made, and the preparation of which occupies more time than would be compatible with the speedy administration of the remedy when ordered. A Pharmacopœia is, in fact, intended to serve the twofold purpose, of a register of approved and established remedies, which the physician employs in the treatment of disease, and a key, or index, by which the pharmaceutist, or dispenser of medicines, can interpret the terms by which these remedies are distinguished and ordered.

The separation of pharmacy from the practice of medicine is supposed to have taken place, first, in Arabia. It is here that the occupation of a pharmaceutist appears to have been first recognised by law as a distinct and separate branch of the medical profession. Establishments for dispensing medicines existed at Cordova, Toledo, and other large towns under the dominion of the Arabs, prior to the twelfth century, and all establishments of this description were placed under severe legal restrictions. From these regulations, the Emperor Frederick II. is said to have copied the principal articles of the law passed in 1233, and which remained in force for a long time in the two Sicilies, with reference to the practice of pharmacy.* According

* Hoefer, Histoire de la Chimie depuis les temps les plus reculés jusqu'à notre époque 1842.

to this law, every medical man was required to give information against any pharmaceutist who should sell bad medicines. The pharmaceutists were divided into two classes: 1st, the *Stationarii*, who sold simple medicines, and *non-magistral* preparations, according to a tariff settled by competent authorities; 2ndly, the *Confectionarii*, whose business consisted in scrupulously dispensing the prescriptions of the medical men. All these pharmaceutical establishments were placed under the surveillance of a College of Medicine.*

During the thirteenth, fourteenth, and fifteenth centuries, apothecaries' shops, or dispensaries, were established in most of the large cities in France and Germany; and these, in the first instance, were often fitted up and supported at the public expense. A garden was also, in these cases, often appropriated to the apothecary, for the cultivation of such indigenous plants as he required.

In 1345, King Edward III. gave a pension of sixpence a day to Coursus de Gangland, an apothecary in London, for taking care of, and attending, his Majesty during his illness in Scotland. But it is probable that apothecaries were not common in England at this period.

We are informed by Saladin, a writer of the fifteenth century, that at that time the only books referred to by the apothecaries, as authorities with reference to the preparation of medicines, were, the works of Avicenna; the treatise on Simple and Compound Medicines, by Serapion; a treatise on Synonemes, and the Quid pro Quo on Substitutes, by Simon; the Liber Servatoris of Bulchasin Ben Aberazerin, treating of the preparation of plants and animals, and the chemical remedies then in use; the Antidotarium of Johannes Damascenus, or Mesué; and the Antidotarium of Nicolaus de Salerno.

The last-named author, who was director of the school at Salernum, a city in the kingdom of Naples, lived about the middle of the twelfth century. In his *Antidotarium*, or *Isagogica introductio in artem Apothecariatus*, he described a great number of medicines, principally taken from the Arabs. He must not be confounded, as he has been by some writers, with Nicolas Prevost, called Præpositus, of Tours, whose Dispensatory was published in 1488, and subsequent editions of it in 1505, 1564, and 1582. This work is considered to have been the first of the kind circulated in Europe.

Many of the remedies introduced into medicine about this period, owed their origin to the investigations of the alchemists, who were engaged in the futile endeavour to discover the philosopher's stone, and the universal remedy for all diseases of the body.

Raymond Lully, of Majorca, was one of the principal writers of this school. He was born in the year 1235, and died in Africa in 1315. He is said to have written about sixty volumes on subjects connected with chemistry. Among these were his works, *de Lapide Aurifico; de Quinta Essentia; de Accurtatione Lapidis Philosophorum; Lux Mercuriorum*, &c.

Basil Valentine, born in 1394, contributed greatly by his writings to the introduction of chemical remedies in the practice of medicine.

* Constitutiones Neapolitanæ et Siculæ, liii. tit. xxxiv. 1, 2, apud Lindenborg., Cod. legum antiquarum; Francf., 1613, in fol.

One of the most celebrated of his works was the *Currus triumphalis Antimonii.*

The efforts made by Basil Valentine to introduce chemical agents, derived from the mineral kingdom, in the treatment of disease, were subsequently followed up by his successor, PARACELSUS, who was born in 1493.

At this period, the number of pharmaceutical establishments in France, Germany, and Italy, which had previously been very limited, began to increase. The proprietors of these establishments, however, were but little acquainted with the art of compounding medicines, and therefore the most important remedies were often prepared in the presence of the medical men by whom they were prescribed.* *Chemical remedies*, in the sense in which this term was then employed, were but seldom obtained from the apothecary's shop, such being prepared and supplied by a distinct class of men, who were professed chemists. Paracelsus and his followers, anxious for the introduction of chemical remedies, loudly complained of the ignorance and incompetency of the pharmaceutists, and ascribed to this cause, in a great measure, the strong hold which the advocates for *Galenical medicines* still retained on the confidence of the public.

In 1524, the DISPENSATORY of VALERIUS CORDUS was published, under the sanction of the senate of Nuremberg. This is considered to have been the first authorized Dispensatory or Pharmacopœia, published in Europe. Subsequent editions appeared in 1535 (*Dispensatorium Pharmacorum omnium; Nuremb.* 1535) and in 1542. This work, like that of Nicolas Prevost, was principally compiled from the *Antidotarium* of MESUÉ and of NICOLAUS DE SALERNO.

In 1538, the medical men of Augsburg, in Germany, formed a sort of Pharmacopœia, the formulæ contained in which were generally adopted in that place.† Augsburg was then a place of great trade, especially with Italy, from whence, it is probable, the regulations connected with the practice of medicine were introduced. The work thus commenced was subsequently published in a more mature form in 1601, under the title of *Pharmacopœia Augustana.* The seventh edition appeared in 1622.

The following works were published during the sixteenth century:— Bretschneider's *Pharmacopœia in compendium redacta;* Antw. 1560. Foe's *Pharmacopœia;* Basil, 1561. Collado's *Pharmacorum omnium, quæ in usu sunt apud nostros pharmacopœos enumeratio;* Valentiæ, 1561. Fuch's *Pharmacorum omnium, quæ in communi sunt practicantium usu;* Paris, 1569. Maselli's *Pharmacopœia Bergamensis;* Bergam. 1580. Nuck's *Pharmacopœia;* Amsterd. 1580. Bauderon's *Paraphrase sur la Pharmacopée;* Lyon, 1588.

Fernel and Sylvius also wrote in the sixteenth century.

In the years 1514, 1516, 1520, 1571, 1583, and 1594, laws were passed for the regulation of the practice of Pharmacy in France.

* *Lisetti Benanci*, Declaratio fraudum et errorum apud pharmacopœos commissorum Acced. ejusd. argumenti dialogus, *Lodetti.* Turon. 1553.

† Conclusiones et propositiones universum medicinam per genera complectentes. *Augusta Vindelicorum*, 1558.

PHARMACOPŒIAS OF THE BRITISH EMPIRE.

The first *Pharmacopœia of the London College of Physicians* appeared in May, 1618. This was circulated among the members of the College, and the London apothecaries, but was found to be so imperfect, that the greater part of the edition was cancelled, and a new edition issued in the following December. It was reprinted, with slight alterations and improvements, in 1621, 1632, and 1639, and was remodelled in 1650.

In this edition, the names of the original authors of the several formulæ, which had previously been inserted, were omitted. Several new formulæ were added, and some of the old ones left out. Similar alterations were again made in 1677. An excellent formula for "*Usquebagh, sive aqua vitæ, Hibernis popularis*," was inserted in this edition, (see formulæ,) and several other equally important additions were made. The next material change was made in 1721, under the presidency of Sir Hans Sloane, when, for the first time, the botanical names of the vegetables included in the Materia Medica were given; it being stated in the preface,—"*The catalogue of simples has been drawn up entirely de novo: the name of each plant, and in some cases there is more than one, has been annexed; as well the officinal name, as that which is retained by the more accurate botanists. Those who know how easily plants of the same genus and name may be confounded, must clearly see that errors could scarcely have been avoided in any other way than by employing this distinction of terms.*" This was the first step towards a scientific improvement in the work; in other respects, however, it still retained its original character, the great majority of the formulæ remaining unaltered, although a few of the obsolete ones were omitted. Among other changes, "Saccharum Hordeatum" (*barley sugar*) was substituted for "Saccharum Penidium" (*pulled sugar*).

At this period, a "more correct and concise method of prescribing"* began to prevail among the most eminent of the physicians, with whom the old-fashioned formulæ, lengthened out with redundancy of heterogeneous and often incompatible ingredients, had fallen into disuse; and a desire soon prevailed for effecting a more radical reformation in the Pharmacopœia than had hitherto been attempted. Most of the formulæ adopted by the London College, even those of the Pharmacopœia of 1721, were taken from the works of Mesué, Nicolaus, Renodius, Fernel, and authors of this class, with reference to which formulæ, the College, in the preface to their Pharmacopœia of 1746, state: "It were certainly a disgrace and just reproach, if pharmacy should any longer abound with those inartificial and irregular mixtures, which the ignorance of the first ages introduced, and the perpetual fear and jealousies of poisons enforced; against which the ancients endlessly busied themselves in the search of antidotes, which for the most part they superstitiously and doatingly derived from oracles, dreams, and astrological fancies; and vainly hoping to frame composi-

* Preface to the London Pharmacopœia. 1746.

tions that might singly prevail against every species of poison, they amassed together whatever they had imagined to be endued with alexipharmic powers. By this procedure, the simplicity of physic was lost, and a wantonness in mixing, enlarging, and accumulating, took place, which has continued even to our times." The celebrated mithridate and theriaca may be instanced in illustration of the foregoing statement, these medicines having been said to contain the proper antidote against every possible species of poison. Nor was this redundancy of composition confined to such medicines as the above: the same feature pervaded nearly the whole of the formulæ of the early pharmacopœias. One of the old Paris Pharmacopœias contained a formula for a plaster, (emplastrum diabotonon,) consisting of sixty ingredients, and for a distilled water, (aqua generalis,) consisting of more than 120 ingredients. Previous to the publication of the Pharmacopœia of 1746, the London College appointed a committee of their body for the purpose of suggesting such alterations as were thought desirable to be made. This committee appear to have entered upon their work with a determination of founding the formulæ upon the principles of simplicity. A most radical change was recommended by the committee and carried out by the College. The arrangement of the work was entirely recast; nearly the whole of the old prolix formulæ were rejected, and those which were substituted for them may be said to have originated and formed the bases of the medicinal compounds which have chiefly been employed in this country from that day to the present. Dr. Plumptre was president of the College at the time this Pharmacopœia was published.

In 1788 a further change was made; and as that which had taken place in 1746 related chiefly to what are called the Galenical preparations, so this, for the most part, had reference to the chemical. Subsequent changes were made in 1809, 1824, 1836, and 1851, the last date being that of our present Pharmacopœia.

The following are the years in which the several editions and reprints of the *London Pharmacopœia* have appeared:—viz., 1621, 1627, 1632, 1639, 1650, 1651, 1677, 1678, 1682, 1699, 1720, 1721, 1722, 1724, 1731, 1736, 1745, 1746, 1747, 1748, 1757, 1762, 1763, 1771, 1786, 1787, 1788, 1809, 1815, 1824, 1836, and 1851.

The *Edinburgh Pharmacopœia* was first published in 1699. Subsequent editions, or republications, have appeared in 1721, 1722, 1727, 1735, 1744, 1756, 1774, 1783, 1784, 1788, 1792, 1803, 1804, 1806, 1813, 1817, 1839, and 1841.

The first *Dublin Pharmacopœia* was published in 1807. Previous to this time, however, in the year 1794, a *Specimen Pharmacopœia* had been circulated among the members of the college, and another in 1805. The preparation of these works had been chiefly committed to Dr. Percival.* A new Pharmacopœia for Ireland was brought out in 1826, and this has since been superseded by *The Pharmacopœia of the King and Queen's College of Physicians in Ireland*, of 1850.

A Pharmacopœia was announced some years ago, as being in course of preparation, for *Bengal* and *Upper India*.

* Historical Sketch of the Progress of Pharmacy in Great Britain. By Jacob Bell.

FRANCE.

The Parisian Codex, or *French Pharmacopœia*, was first issued in 1639. In the year 1590, the parliament had decreed, with a view to the public good, that the faculty of medicine should elect a committee of their body, for the purpose of preparing a DISPENSATORY *containing the simple and compound medicines which the apothecaries of Paris ought to keep in their shops.* This decree remained unexecuted, and parliament, in 1597, named twelve members of the faculty of medicine, who were enjoined to prepare a Dispensatory. Notwithstanding this, and that a fresh injunction was issued in the succeeding year, the *Codex* did not appear until 1639, in compliance with a new order from Louis XIII.

New editions of the *Codex* were published in 1645, 1732, 1748, and 1758, which was the last published before the Revolution.

On the 21st Germinal, year 11 of the Revolution, a law was passed by which the government was required to charge the Professors of the Schools of Medicine, associated with the Professors of the School of Pharmacy, to prepare a "*Codex*, or *Formulary*, of the medicinal and pharmaceutical preparations that ought to be kept by pharmaceutists." It was also enacted, that this *Codex* should not be published without the sanction and order of the government.

In compliance with this law, and by order of the government, the *Codex Medicamentarius* was published in 1816.

In 1835, a commission was appointed by the king for preparing a new edition of the work. Of this commission, M. Orfila was *President*, and MM. Andral, Dumeril, and Richard, Professors of the faculty of medicine, and MM. Bussy, Caventou, Pelletier, Robiquet, and Soubeiran, Professors of the School of Pharmacy, were members. The work was completed and published in 1839, and is that which still continues in authority. It is written in French, the title being,

"CODEX, *Pharmacopée Française, rédigée par ordre du Gouvernement par une commission composée de MM. les professeurs de la faculté de médecine, et de l'Ecole spéciale de Pharmacie de Paris.*" Paris, 1839.

Besides the above, the following Pharmacopœias have been published in France, but they have since been superseded by the Paris Codex:—

Codex Medicamentorum, seu Pharmacopœia Tolosana. Tolos. 1648, 1695.

Pharmacopée de Lyon. 1778.

HOLLAND AND BELGIUM.

The Pharmacopœa Batava was published in 1805 for the united provinces of Holland. Previously to this time, the *Pharmacopœia of Amsterdam*, which was published so early as 1636, and subsequently in 1639, 1682, 1701, 1714, and 1792, had been in general use among the Dutch. After the annexation of Holland to Belgium, a new Pharmacopœia was published in 1823, under the name of *Pharmacopœa*

Belgica, superseding the *Pharmacopœa Batava*, and having authority throughout the Netherlands. No subsequent edition of this work has appeared, but it is said that one is in course of preparation.

Soon after the publication of the *Pharmacopœa Belgica*, J. F. Niemann republished the *Pharmacopœa Batava* with notes, under the title of,

Pharmacopœa Batava recusa, cum notis et additamentis Medico-pharmaceuticis. Edit. Jno. Frid. Niemann. Lips. 2 tom. 8vo. 1824.

This work acquired some reputation, being considered superior to that which had been invested with authority.

The following were published in these countries, at early dates, but are not now extant:—

Pharmacopœia Antwerpiensis. Antwerp, 1661.
Pharmacopœia Hagana. 1738.
Pharmacopœia Leidensis. Leyden, 1751, 1770.
Pharmacopœia Leodensis. Liège, 1741.
Pharmacopœia Utrajectiva. Utrecht, 1664.

NORTH GERMANY.

Germany is divided into a great number of states or principalities, which have separate laws for the regulation of pharmacy, and separate Pharmacopœias of their own.

Pharmacopœa Borussica. This has authority throughout the Prussian state. As far back as 1608 there was published a Pharmacopœia, entitled, *Dispensatorium Brandenburgicum s. norma juxta quam in provinciis Marchionatus Brandenburgici medicamenta officinis familiaria dispensanda, &c.* Berol. It was followed in 1713 by the *Dispen. regium et electorale Borusso-Brandenburgicum*, of which there were new editions in 1726, 1731, and 1781. On the last of these was founded the *Pharmacopœa Borussica*, which appeared in 1799, under the title of *Pharmacopœa Borussica cum gratia et privilegio sacræ regiæ Majestatis*, Berolia. New editions have since appeared in 1801, 1813, 1827, and 1846, the last having come into authority since the 1st of April, 1847. The title of this, which is the sixth edition, is simply *Pharmacopœa Borussica.*

Codex Medicamentarius Hambergensis. Laws have existed for the regulation of the practice of medicine and pharmacy in the free town of Hamburgh and its territories since 1818. The Hamburgh Pharmacopœia is published under the authority of these. The present is the second edition, which was published at Hamburgh in 1845. Its title is, *Codex Medicamentarius Hambergensis. Auctoritate collegii sanitatis editus.*

Pharmacopœa Hannoverana nova. This appertains to the kingdom of Hanover. The first edition was published in 1818; the present, which is the second edition, in 1831.

Pharmacopœa Hassiaca, for the principality of Hesse. This was preceded by the *Dispensatorium Hessiacum*, published at Cassell in 1806, and again in 1816.

Pharmacopœa Saxonica. Piderits Pharmacia rationalis, was for-

merly used by the apothecaries of Saxony. The first Latin Pharmacopœia was published by Dr. Leonardi in 1820; and a supplement was added to this in 1830 by Dr. Seiler. The second edition of this work, edited by Seiler, Carus, and others, under the title of *Pharmacopœa Saxonica jussu regio et auctoritate publica denuo edita, recognita et emendata*, appeared in 1837, and is that now in authority. It is published at Dresden.

Pharmacopœa Slesvico-Holsatica. The Danish Pharmacopœia of 1772, and subsequently that of 1805, were formerly used in Sleswick-Holstein. In 1831, however, a Pharmacopœia was published at Kiel, under the title of *Pharmacopœa Slesvico-Holsatica, regia auctoritate edita.* It was prepared by C. H. Pfaff, under the authority of the Sanitary College of Kiel. There has been no subsequent edition.

SOUTH GERMANY.

Pharmacopœa Austriaca. There are two Pharmacopœias for Austria; one for general purposes, and the other for the army. The former of these, *Pharmacopœa Austriaca*, has passed through four editions, the present or fourth having appeared in 1834, and a reprint of it, with some corrections, in 1836. It was prepared by four members of the faculty of medicine at Vienna, and two presidents of the Pharmaceutical College.

The Pharmacopœa Castrensis Austriaca, or *Military Pharmacopœia*, is of later date, having been published in 1841, under the auspices of the Military Academy of Medicine at Vienna. Most of the formulæ are the same in both Pharmacopœias, but where differences occur, the advantage is considered to lie on the side of the Military Pharmacopœia.

These Pharmacopœias have authority in all the German-Illyrian, Bohemian-Gallician, and Italian provinces of the Austrian empire.

Pharmacopœa Badensia. The increased importance which Baden acquired in the beginning of the present century led to the adoption of regulations for the government of its medical and pharmaceutical affairs. In the first instance, however, it was not thought desirable to have a separate Pharmacopœia for this district, and accordingly the *Pharmacopœa Borussica* was adopted in Baden until the year 1841, in the latter part of which year the *Pharmacopœa Badensia* was published. The present is the first and only edition of the work.

Pharmacopœa Bavarica. This is the Pharmacopœia for the kingdom of Bavaria; it was published in 1822.

Pharmacopœa Wurtembergica. This Pharmacopœia has existed since 1750, and has passed through several editions in 1770, 1785, 1798, and 1847.

NORTH EUROPE.

Pharmacopœa Danica. Medical and pharmaceutical institutions have been long established and well regulated in Denmark. The first Danish Pharmacopœia was published in 1772, and subsequent editions

in 1786, 1805, and 1840. The last is that which is now in authority in Denmark, under the title of *Pharmacopœa Danica, regia auctoritate a collegio sanitatis regio Hafniensi edita.* Hafniae, 1840.

Besides this, however, there are two other Pharmacopœias, or Dispensatories, used in the state, one by the military physicians, entitled, *Pharmacopœa Militaris. Efter allerhoïeste Befaling udarbeitet et en dertil nedsat Commission.* Kjöbenhavn Reitzel, 1840. The other, for the poor, entitled, *Udvalg af Laegemidler, der skulle bruges i den offentlige Praxis.* Kjöbenh, 1843.

The Pharmacopœia Danica is used in Norway, but steps have been taken for the preparation of a Norwegian Pharmacopœia.

Pharmacopœa Suecica. The successful cultivation of chemistry in Sweden has produced a beneficial influence on the pharmaceutical regulations of that country, which in their principal features are similar to those which exist in Denmark. The general management of medical and pharmaceutical affairs, including the publication of the Pharmacopœia, is vested in the Sanitary College at Stockholm.

The first Pharmacopœia was entitled *Pharmacopœa Holmiensis*, and was published at Stockholm, in 1686. This was followed, in 1775, by the *Pharmacopœa Suecica*, new editions of which appeared in 1779, 1784, 1790. In 1817, was published the fifth edition, the botanical part of which was prepared by the celebrated Swartz, and the chemical part by Berzelius. There has been one edition published since —namely, that of 1845, entitled *Pharmacopœa Suecica. Editio sexta.* Stockholmiæ, 1845. Reprinted in 1846.

Pharmacopœa Castrensis Ruthena. Russia has imitated the more advanced European states in the enactment of laws for regulating the practice of pharmacy. These only date from the year 1836, yet a *Russian Pharmacopœia* was published so long ago as 1778. Subsequent editions appeared in 1782, 1798, 1799, and 1803.

Besides this, which was called *Pharmacopœa Rossica*, there was a separate Pharmacopœia for Finland, the *Pharmacopœa Fennica*, published at Abo in 1819; and another for Poland, the *Pharmacopœa Polonica*, published at Warsaw in 1817.

All these, however, were superseded by the *Pharmacopœa Castrensis Ruthena.*

The first military Pharmacopœia was published in 1765, but this was little more than a catalogue. The *Pharmacopœa Castrensis Rossica* appeared in 1779, and a *Pharmacopœa Navalis*, in 1789. These passed through several editions, and were ultimately both absorbed by the *Pharmacopœa Castrensis Ruthena*, which was first published by Dr. Jacob von Wylie, Baronet, in 1808, subsequently in 1812 and 1818, and, lastly, the fourth and present edition in 1840. This Pharmacopœia is required to be used in all military, naval, and other government establishments. In the private apothecaries' shops, the *Prussian Pharmacopœia* is very generally used, and the law allows the use of this, the *Saxon*, *Sleswick-Holstein*, *Danish*, *Swedish*, *Bavarian*, *Dutch*, *London*, *Edinburgh*, *Dublin*, *Spielman's*, or the *Russian Military Pharmacopœia.* This state of the law is embarrassing to the pharmaceutist, and has been considered unsatisfactory;

a *Civil Pharmacopœia* for Russia and also Finland was, therefore, undertaken, and a new Pharmacopœa Fennica was published in 1850.

SPAIN AND PORTUGAL.

In these countries, and in south and south-west Europe generally, less progress has been made in advancing the pharmaceutical art than is the case in the more northern countries. The following Pharmacopœias have been published in SPAIN:—

Pharmacopœia Valentianensis. Valenc. 4to. 1651.

Pharmacopœia Catalana. 4to. 1686.

Pharmacopœia Madritensis. 1729, 1738, 1794, 1798, 1822.

Pharmacopœia Hispana. Ed. alt. Regis jussu et impensis. Madrid. 8vo. 1798.

Pharmacopœa Hispanica et Lusitanica continens. 1822.

Farmacopea en Castellano. Madrid. 1823.

The following have been published in PORTUGAL:—

Pharmacopœia Lusitana. Lisbon. 1711.

Pharmacopœia do Pinto. Coimbra. 1794.

Pharmacopeia Geral para o Reina e Dominios de Portugal, publicada por ordem da Rainha Fidelissima Maria I. 8vo. Lisbon. 1794.

Pharmacopea Lusitana feita por uma Commissao creada por Decreto de 5 de Outubro, 1838. 1838.

Formulario dos Hospitares militares feito por uma Commissao. 1841.

Formulario dos Medicamentos para o Hospital Real de S. José feito por uma Commissao. 1843.

SOUTH EUROPE.

Pharmacopœa Græca. It is only since the establishment of the present dynasty in Greece, that a Pharmacopœia has existed in that country. The confusion resulting from the establishment of European physicians in Greece, while there was yet no recognised standard for the preparation of medicines, induced the Sanitary College of Athens to commission Professors Bouro, Landerer, and Sartori, to prepare a Pharmacopœia. This was published in 1837, under the title of *Pharmacopœa Græca, jussu regio et approbatione Collegii Medici edita auctoribus, Joanne Bouro, Med. et Chir. D., Path. et Ther. Prof. p.o., Coll. Med. Membr.; Xaverio Landerer, Pharmac. Reg. Chem. Prof., Coll. Med. Membr.; et Josepho Sartori, Pharm. aul. Athenis.* 1837.

SWITZERLAND.

Pharmacopœia Genevensis, auct. C. G. Dunant, L. Odier, et De la Roche. Gen. 8vo. 1780.

Pharmacop. Helvetica. 1771. 2 vols. fol.

Pharmacopœia Regia, Galenica et Chimica. Gen. 1684.

Manuale Pharmaceuticum in usum minorum urbium. Basil. 8vo. 1779.

ITALY.

Pharmacopœia Ferrarese, dell dott. Antonio Campana. Firenz. Edit. 7 ma. 1821, pp. 423.

Bononiensis Collegii Medicorum Antidotarium, editum anno 1783. *Editio novissima in qua Completissimus adjectus est Index virium ac Usuum Medicamentorum.* Venet. (Venice.) 4to. 1783.

Formulario Farmaceutico. Genov. (Genoa.) 1791. 8vo.

Formulario Farmaceutico per uso dell Ospedale di Pammatone. Genov. (Genoa.) 8vo. 1798.

Codice Pharmaceutico per lo stato della ser. Rep. di Venezia, compilato per ordine del excellentiss. magistrato della Sanita. Padov. (Padua.) 4to. maj. 1790.

Pharmacopœia Bergamensis, rationem componendi medicamenta usitatiora complectens, ed. P. Lanci et P. Maselli. Berg. (Bergamo.) 4to. 1580.

Pharmacop. Messenensis. Mess. fol. 1629.

Pharmacop. Sardoa, ex Selectioribus codicibus, optimisque Scriptoribus collecta, in unum corpus digesta, ac nunc primum edita, a Jac. Jn. Pedemontano August. Taurin. (Turin.) 4to. 1773.

Ricettario de dottori de Arte e di Medicina dell Collegio Fiorentino all' instanza di Signori Conculi della Universita cett. Fiorenze, fol. 1498. Recus. *ibid.* 1567, 1597.

Ricettario Fiorentino nuovamente Compilato e redotto all' uso Moderno, diviso in due parte. Firenze, 1789, 4to. pp. 350.

PERSIA.

Pharmacopœia Persica, ex idiomate Persico in Latinum conversa. Paris. 1681.

AMERICA.

The Pharmacopœia of the United States of America was first published near the close of the year 1820, under the authority of a *National Medical Convention*, which met at Washington, on the first day of the preceding January. It was entitled,

The Pharmacopœia of the United States of America. By the authority of the Medical Societies and Colleges. 8vo. Boston. 1820. A revised edition of this work appeared in 1830, and regulations were now made for revising it every ten years. The second revision commenced in 1840, and resulted in the publication of the Pharmacopœia of 1842. Another revision took place in 1850, and *The Pharmacopœia of the United States of America* (*by authority of the National Convention, held at Washington,* A.D. 1850) appeared in 1851. This and the preceding work were published at Philadelphia.

Besides the Pharmacopœias which have been published under the sanction and authority of the laws of the respective countries in which they are principally used, there are a great number of works, usually called Dispensatories, which resemble Pharmacopœias in their general objects, but differ from them in being the production of individual

authors, and not of any public bodies having legal power to enforce compliance with the prescribed formulæ. Several works of this description which appeared in the sixteenth century have already been alluded to; a brief notice of some of those which have since been published will now be given.

Quercetan's *Pharmacopœia Dogmaticorum Restituta* was published in 1603. An edition of this work was published at Frankfort, in 1615, together with a second edition of the *Dispensatorium Medicum* of Renou, or Renodoeus. This was probably the first Dispensatory written upon the plan which has generally been adopted by the authors of Dispensatories in this country. It treats, first, of Pharmaceutical Operations; secondly, of the Materia Medica; and thirdly, of the Preparations and Compounds; each formula being followed by a commentary.

In 1621, Mindererus published a work on Military Medicine; and about the same time appeared the *Pharmacopœia Spagirica* of Poterius.

Schroeder's *Pharmacopœia Medico-Chymica* was a work of some merit. It was published in 1641, at Ulm, in Wurtemberg. An edition of 1672, published at Leyden, in Holland, contains the Materia Medica, in Latin, French, English, and Dutch.

Glauber's works—*De Furnis Novis Philosophicis; Tractatus de Medicina Universali; De Natura Salium; Novum lumen Chimicum;* and *Pharmacopœia Spagirica*—were published between the years 1646 and 1668, in which latter year the author died.

About this time Culpeper wrote, and acquired some celebrity by the severity of his criticisms on the London College of Physicians and their first Pharmacopœia. He was born in 1616, and published his translation of the London Pharmacopœia in 1653, soon after which period he died.

In 1676, Charas published his *Pharmacopée Royale, Galenique et Chemique*, which two years after was published in this country in English.

Contemporary with Charas, and not less celebrated as pharmaceutical writers, were Pomet, chief pharmacien to Louis XIV., whose *Histoire des Drogues* was published in 1694, and Nicolas Lemery, whose *Pharmacopée Universelle*, and *Dictionnaire ou Traité Universel des Drogues Simples*, were published in 1697. These works acquired a just and lasting reputation. The second edition of Lemery's Dictionary was published in Paris in 1714.

In 1688, Mr. James Shipton, an apothecary in London, published a collection of formulæ said to have been those prescribed by Dr. George Bate, a celebrated physician in the time of Charles II. This work was entitled, *Pharmacopœia Bateana. In qua octingenta circiter pharmaca, pleraque omnia é praxi Georgii Batei, Regi Carolo Secundo proto-medici excerpta, ordine alphabetico concise exhibentur. Quorum nonnulla in Laboratorio Publico Pharmacopœano Lond. fideliter parantur venalia: atque in usu sunt hodierno apud Medicos Londinenses.* The third edition appeared in 1700. Meanwhile, translations of the previous editions were published by Dr. Fuller in 1691, and by Dr. Salmon, in 1694. The Pharmacopœia Bateana has

been a work of frequent reference from the time of its first appearance to the present day.

Dr. Fuller also published a Pharmacopœia of his own, called the *Pharmacopœia Extemporanea*, in 1714.

Dr. Quincy was an author of some repute in the early part of the eighteenth century. He delivered lectures on Pharmacy, which were published shortly after his death, in 1723, by Dr. Shaw. His principal work was his *Pharmacopœia Officinalis et Extemporanea*, or, *Complete English Dispensatory*, which first appeared in 1718, and reached a sixth edition in 1726. It was translated into French, in 1745, by Clausier.

Dr. R. James's *Pharmacopœia Universalis*, or, *New Universal English Dispensatory*, followed Dr. Quincy's, being first published in 1747, and the second edition in 1752. It was arranged on a similar plan to that of Quincy's Dispensatory.

In 1753 was published Dr. Brookes's *General Dispensatory ;* and in the following year, 1754, Dr. Lewis published the first edition of his *New Dispensatory*, containing commentaries on the London and Edinburgh Pharmacopœias. A concise system of the theory and practice of pharmacy was prefixed as an introduction. This work acquired a high reputation, and was decidedly the best of the kind that had been published at the time. It passed through many editions during the author's lifetime; and after his death, the work was reprinted without much alteration, in London, where it had originally been published ; while, in Edinburgh, Dr. Webster, Dr. Duncan, Dr. Rotherham, and Dr. Duncan, jun., brought out new editions of it, with such alterations and improvements as the advancement of scientific knowledge demanded; and to distinguish these from the London editions, the authors adopted the title of *The Edinburgh New Dispensatory.* Dr. Duncan, jun., became the editor, in 1803, from which time to 1830 the work passed through twelve editions. The tenth edition was translated into French by M. E. Pelouse, with notes by Robiquet and Chéreau.

In 1806, Dr. Coxe's American Dispensatory appeared.

Dr. Anthony Todd Thomson commenced the publication of his *London New Dispensatory* in 1811. This work was written on the plan of the Edinburgh New Dispensatory; it has been always considered a very useful work, and has had a great circulation, having gone through ten editions, during the lifetime of the author. The eleventh edition, edited by Dr. A. B. Garrod, was published in 1852.

In this year, 1811, also appeared the *Traité de Pharmacie, Théorique et Pratique*, of I. I. Virey.

Dr. Paris's Pharmacologia, although not strictly a work of the description here treated of, merits a brief notice, on account of the information it contains on pharmaceutical subjects. It was first published in 1812, and has reached the ninth edition.

In 1818, Mr. Gray published the first edition of his *Supplement to the Pharmacopœias.*

This work had passed through six editions previously to its being remodelled by the present editor.

Magendie's *Formulaire pour la Préparation et l'Emploi de Plusieurs*

Nouveaux Médicamens, commenced in 1821 ; it has been translated into English by Mr. Houlton and Dr. Gully.

Translations of the London Pharmacopœia were published by Dr. Richard Powell, in 1809 and 1815.

In 1824, Mr. Richard Phillips, who had previously published some criticisms on the London Pharmacopœia, brought out a translation of the new edition of the Pharmacopœia, published by the London College in that year. This work contained much valuable information on practical pharmacy, some of which the college availed themselves of in the subsequent edition of their Pharmacopœia ; and of this latter work Mr. Phillips became the authorized translator.

Brande's Manual of Pharmacy was published in 1825 ; and Rennie's New Supplement to the Pharmacopœias in 1826.

In 1828, appeared Jourdan's *Pharmacopée Universelle*, an English translation of which was edited by Rennie in 1833.

In 1828 also appeared the *Traité de Pharmacie* of Henry and Guibourt of Paris ; a work of great merit. The third edition has been published in an enlarged form by Professor Guibourt.

The *Observations on the Dublin Pharmacopœia*, by Drs. Barker and Montgomery, which appeared in 1830, and the *Translation of the London Pharmacopœia*, with criticisms, by Dr. Collier, in 1837, contain a good deal of valuable information.

A Translation of the London Pharmacopœia, with a Commentary, was also published by Dr. Spillan in 1837.

Dr. Kane, of Dublin, in 1831, published a very useful little volume, entitled *Elements of Practical Pharmacy*.

Among the works of this class more recently published, may be mentioned

The Dispensatory of the United States of America, by Drs. Wood and Bache ; first edition, 1833 ; fifth edition, 1843 ; ninth edition, 1851.

The *Nouveau Traité de Pharmacie*, by E. Soubeiran ; first edition, 1836 ; second edition, 1842 ; and third edition, 1846.

The Elements of Materia Medica, by Dr. Pereira ; first edition, 1837 ; second edition, 1842 ; third edition, 1849–53.

A Dispensatory, or Commentary on the Pharmacopœias of Great Britain, by Dr. Christison ; first edition, 1842 ; second edition, 1848.

Manual of Materia Medica and Therapeutics, by J. F. Royle, M.D. 1847. Second Edition, 1853.

Elements of Materia Medica and Therapeutics, by E. Ballard, M.D., and A. B. Garrod, M.D. 1845.

Practical Pharmacy, by F. Mohr and Theophilus Redwood. 1849.

A Translation of the New London Pharmacopœia, including the Dublin and Edinburgh Pharmacopœias. By J. B. Nevins, M.D. 1851.

The Three Pharmacopœias (London, Edinburgh, and Dublin), with practical remarks, by Peter Squire. 1851.

The Bengal Dispensatory, by Dr. O'Shaughnessy. 1842.

Medicines, their Uses and Mode of Administration, by Dr. Neligan. 1844 ; second edition, 1847.

The Pocket Formulary, by Henry Beasley, fifth edition, 1851.

The Druggist's General Receipt Book, second edition, 1852.

WEIGHTS AND MEASURES.

Weights and measures are artificial standards by which the gravity and bulk of substances are estimated. In the first instance, some natural products, such as seeds, which were easily attainable, and the gravity and dimensions of which were pretty uniform, were used as units, from which other denominations of weight or measure were calculated. Thus by a law passed in the fifty-first year of the reign of Henry III., A.D. 1266, it was enacted, that "an English penny, called a sterling, round and without clipping, shall weigh thirty-two wheat corns in the midst of the ear, and twenty pence do make an ounce, and twelve ounces one pound, and eight pounds do make a gallon of wine, and eight gallons of wine do make a London bushel, which is the eighth part of a quarter." The standards of weight and measure being arbitrary, differences have existed between those adopted in different countries, and it has not unfrequently occurred that two or three standards have been employed in the same country. This has been the case in England, where the Avoirdupois, the Troy, the Tower or Saxon, and the Foil Weights, have been introduced at different periods, and more or less extensively used for weighing different substances.

ENGLISH WEIGHTS.

Avoirdupois weight, according to Mr. Gray, (Elements of Practical Pharmacy, p. 5,) was introduced to this country by the Romans, at the period of the first civilization of the island; but it was then called auncel weight, from its being used according to the Roman custom, with the *statera Romana*, or steel-yard, or with the auncel, *ansula*, or Danish steel-yard, with a fixed weight and moveable fulcrum. Dr. Ellis, however, in a paper published in the second volume of the American Journal of Pharmacy, states that the Troy and Avoirdupois weights were originally introduced by the Lombards, and the first sanctioned by law in 1496, when it was introduced in the composition of the gallon and bushel. In the 24 Henry VIII., butchers are ordered to provide beams, scales, and weights, called *haberdepois*.

AVOIRDUPOIS WEIGHT (*Old Division*).*

									Equivalents in Troy grains.
1 grain English									0·77
24 =	1 scruple English								18·22
36 =	1½ =	1 adarme of silk							27·34
72 =	3 =	2 =	1 dram English						53·69
576 =	24 =	16 =	8 =	1 ounce					437·50
6912 =	288 =	192 =	96 =	12 =	1 small pound				5250·00
9216 =	384 =	256 =	128 =	16 =	1	pound			7000·00

Other pounds, containing more ounces, have been in use in different trades and places, as that for raw silk, containing 24 ounces. The Roman government allowed the merchants for waste, in paying custom duties, 20 ounces to the pound; so that the 100 pounds, or centenarius,

* Gray's Elements of Pharmacy, p. 5.

was 120 common pounds. They afterwards lowered the allowance to 18 ounces to the pound, so that the 100 pounds was 112 common pounds and a half. The fraction has since been omitted, and the hundred-weight reckons 112 pounds.

Although our avoirdupois weight has been said to have been derived from the Romans, yet there appears to be some little difference in the values of our pound avoirdupois and the standard of the same denomination still kept at Rome, the Roman pound of 12 ounces being 11 troy grains lighter than ours.

A different division of the pound from that above given was employed by the Romans, as well as a different nomenclature. The common traders used a set of weights in which the ounce was divided and subdivided by two, as follows:—

ROMAN WEIGHT.

	Equivalents in Troy grains.
1 lens or primus	0·76
18 = 1 quadrans drachmæ	13·64
36 = 2 = 1 dimidium drachmæ	27·28
72 = 4 = 2 = 1 drachma	54·57
144 = 8 = 4 = 2 = 1 sicilius, or siclus	109·14
288 = 16 = 8 = 4 = 2 = 1 semiuncia, or assarius	218·29
576 = 32 = 16 = 8 = 4 = 2 = 1 uncia	436·58
6912 = 364 = 192 = 96 = 48 = 24 = 12 = 1 libra	5239·00
9216 = 712 = 256 = 128 = 64 = 32 = 16 = 1 mina or pondo	6985·00

Another division of the ounce, used by some old medical writers, was into sextulæ and scrupuli, which latter were subdivided in imitation of the Attic weights, as in the following table:—

	Equivalents in Troy grains.
1 chalcos	1·13
8 = 1 simplium or obolus	9·09
16 = 2 = 1 scrupulum or gramma	18·19
64 = 8 = 4 = 1 sextula or sextans	72·78
128 = 16 = 8 = 2 = 1 duella or bina sextula	145·56
384 = 48 = 24 = 6 = 3 = 1 uncia	436·58
4608 = 576 = 288 = 72 = 36 = 12 = 1 libra	5239·00

The following terms are sometimes met with in old Latin medical and chemical works for denoting different numbers of ounces:—

Uncia	1 ounce
Sextans libræ	2 ,,
Quadras libræ, or triunx	3 ,,
Triens	4 ,,
Quincunx	5 ,,
Semis, Semissis, Semissius, Selibra, or Sembella	6 ,,
Septunx	7 ,,
Bes, bessis, or des	8 ,,
Dodrans	9 ,,
Dextans, or decunx	10 ,,
Deunx	11 ,,

The modern division of the avoirdupois pound will be found at page 20, where it will be seen that the ounce is divided into 16 drams; but according to Mr. Gray, the division originally was into 8 drams and 16 adarms. The adarm having been, in modern times, employed only in the sale of silk, has become confounded with the dram.

Troy Weight.—Some differences of opinion have been expressed, as to the period at which this weight was introduced into England. The committee upon whose report was founded the Act of 1824, for regulating weights and measures, state as their reason for recommending the adoption of the troy pound as the standard unit of weight—"Because it is the weight best known to our law; that which hath been longest in use; that by which our coins are measured; that which is best known to the rest of the world; that to which our learned countrymen have referred, and compared ancient and modern weights; the weight which hath been divided into the smallest parts. On the other hand, the avoirdupois weight is of doubtful authority; and, though unfit to be made a standard, yet the frequent use of it renders it necessary to ascertain how many ounces, pennyweights, and grains troy, the pound avoirdupois ought to weigh." The divisions of the troy pound, including the apothecaries' weight, are as follow:—

TROY AND APOTHECARIES' WEIGHT (*Old Division*).

1						grain.
6	=	1				farthing penny of silver.
20	=	1	scruple, apothecary.			
24	=	$1\frac{1}{5}$	=	1		pennyweight, or denarius.
30	=	$1\frac{1}{2}$	=	$1\frac{1}{4}$	=	1 farthing penny of gold.
60	=	3	=	$2\frac{1}{2}$	=	1 drachm, apothecary.
288	=	$14\frac{2}{5}$	=	12	=	$4\frac{2}{3}$ = 1 shilling or solidus.
480	=	24	=	20	=	8 = $1\frac{2}{3}$ = 1 ounce troy and apothecary.
5760	=	288	=	240	=	96 = 20 = 12 = 1 pound troy and apothecary.

For the sake of calculation, the gold and silversmiths divide the grain troy into 20 mites, the mite into 24 droits, the droit into 20 periots, and the periot into 24 blanks.

The shilling was more usually employed as the first division of the troy pound, than the ounce, which seems to have been restricted to the avoirdupois weight, as the name of the ore was to the first divisions of the Saxon pound or Danish mark.

The modern divisions of the troy and apothecaries' pound will be found at page 21.

Tower or Saxon Weight.—From an old record, it appears that the Tower pound counterpoised $11\frac{1}{4}$ ounces, or 5400 grains troy. The exact correspondence of 8 ounces of this weight with the mark of Cologne, used in most of the German mints, shows that this pound is the small pound of our Saxon ancestors, or that of the Easterlings, as being derived from Greece, through Thrace. Galen informs us that

24 Greek litras, were equal to 25 Roman libras, which is very nearly the proportion between this pound, and the 12 ounce avoirdupois pound.

The reports of assayers refer to this small Saxon pound as the integer. The divisions employed in assaying gold, and formerly in weighing it, are the following:—

TOWER WEIGHT (*Gold*).

	Equivalents in Troy grains
1 Tower grain	0·98
15 = 1 quarter carath grain, or feorthling mancus	13·87
60 = 4 = 1 carath grain or mancus	55·50
240 = 16 = 4 = 1 carath or loth	225·00
5460 = 384 = 96 = 24 = 1 Tower pound	5400·00

In assaying silver, a different division of weights is employed, and although it is probable, from analogy, that the integral pound used for this purpose was originally the same as that used for assaying gold, yet as it has been divided in the same way as the troy pound, the integer is now supposed to refer to this latter; and the talent, now called a journey (day's work) of silver, is taken as sixty pounds troy.

TOWER WEIGHT (*Silver*).

	Equivalents in Troy grains.
1 Tower grain	0·98
24 = 1 peninga or penny	22·50
480 = 20 = 1 ora or ounce	450·00
5460 = 240 = 12 = 1 Tower pound	5400·00

Other divisions of this pound were formerly made for weighing different commodities, as also another pound containing fifteen ounces. The whole are comprised in the following table:—

TOWER WEIGHT.

	Equivalents in Troy grains.
1 Tower grain	0·98
24 = 1 peninga	22·50
36 = $1\frac{1}{2}$ = 1 mærra peninga or bener peninga	27·75
60 = $2\frac{1}{2}$ = 2 = 1 mancus or drachma	55·50
96 = 4 = $3\frac{3}{5}$ = $1\frac{3}{5}$ = 1 smaelle skylling	90·00
120 = 5 = 4 = 2 = $1\frac{1}{4}$ = 1 skilling	112·50
384 = 16 = $12\frac{4}{5}$ = $6\frac{2}{5}$ = 4 = $3\frac{1}{5}$ = 1 smaelle ora	360·00
480 = 20 = 16 = 8 = 5 = 4 = $1\frac{1}{4}$ = 1 ora	450·30
2400 = 100 = 80 = 40 = 25 = 20 = 6 = 5 = 1 Danish marc	2250·00
5460 = 240 = 192 = 96 = 60 = 48 = 15 = 12 = 1 smaelle punda	5400·00
7200 = 300 = 240 = 120 = 75 = 60 = $18\frac{3}{4}$ = 15 = 1 punda	6750·00

Trett.—An allowance used to be made on some goods at the Custom-house, and also in their sale from the wholesale to the retail dealers, called *trett*. This allowance amounted to 4 lbs. in 104 lbs.; that is,

104 lbs. were reckoned as 100 lbs., the 4lbs. being allowed for *trett*. Now this 4 lbs. in 104 lbs. is just the difference between the Tower weight and avoirdupois weight, 104 lbs. of 15 ores Tower weight being equal to 100 lbs. of 16 ounces avoirdupois weight. Hence it is probable that this allowance was first made in consequence of the Tower weight being used for weighing goods at the Customhouse, and that the object of the allowance was to reduce this weight to the avoirdupois weight generally used in commerce. The practice of allowing trett at the Customhouse has been for some time abolished. Trett has been supposed by some persons to be an allowance made on account of waste.

Foil Weight.—This was formerly used to weigh gold and silver wire, foil, and jewels; and its smaller divisions are still used by the jewellers to weigh diamonds, pearls, and precious stones. As the pound is nearly equal to that of Venice, which weighs 4656 troy grains, and as the articles for which it has been used were formerly imported from Venice, this weight was most likely introduced from thence.

FOIL WEIGHT.

						Equivalents in Troy grains.
1 sixteenth						0·05
16 =	1 jeweller's grain					0·80
64 =	4 =	1 jeweller's carat				3·20
404 =	24 =	6 =	1 penny foil			19·20
7680 =	480 =	120 =	20 =	1 ounce foil		384·00
92160 =	5760 =	1440 =	240 =	12 =	1 pound foil	4608·00

The carat of this weight is derived from the seed of the kurua-tree, whereas the carath of the Tower pound is an Egyptian word, signifying the 24th part of anything, and is applied in Egypt to the divisions of the land into provinces, or of the larger cities into wards, in the same manner as the Latin uncia is used for the 12th part of an integer. As the jewellers mostly deal in silver and gold, and are, therefore, obliged to keep the troy weight, they now use those weights for their jewels, but reckon 150 carats for an ounce. The sixteenths foil, which are equal to the mites of the gold and silversmiths, are sometimes divided again into quarters, which are the smallest weights used in commerce. Some authors assert that the troy ounce is equal to 152 carats 3 grains; in which case, of course, the carat would be equal to 3·152 troy grains.

Imperial Weight.—By a law passed in the year 1824 (5 Geo. IV., cap. 74,) it was enacted, "That from and after the first day of May, "1825, the standard brass weight of one pound troy weight, made in "the year 1758, now in the custody of the clerk of the House of "Commons, shall be, and hereby is declared to be, the original and "genuine standard measure of weight, and that such brass weight "shall be, and is hereby denominated the IMPERIAL STANDARD TROY

" POUND, and shall be, and the same is hereby declared to be, the unit " or only standard measure of weight, from which all other weights " shall be derived, computed, and ascertained; and that one-twelfth " part of the said troy pound shall be an ounce; and that one " twentieth part of such ounce shall be a pennyweight; and that one " twenty-fourth part of such pennyweight shall be a grain; so that " 5760 such grains shall be a troy pound; and that 7000 such grains " shall be, and they are hereby declared to be, a pound avoirdupois; " and that one-sixteenth part of the said pound avoirdupois shall be an " ounce avoirdupois; and that one-sixteenth part of such ounce shall be " a dram."

" And whereas it is expedient that the said standard troy pound, if " lost, destroyed, defaced, or otherwise injured, should be restored of " the same weight, by reference to some invariable natural standard; " and whereas it has been ascertained, by the commissioners appointed " by his Majesty to inquire into the subjects of weights and measures, " that a cubic inch of distilled water, weighed in air by brass weights, " at the temperature of 62° of Fahrenheit's thermometer, the barometer " being at 30 inches, is equal to two hundred and fifty-two grains, and " four hundred and fifty-eight thousandth part of a grain, of which, as " aforesaid, the imperial standard troy pound contains 5760; be it " therefore enacted, that if at any time hereafter the said imperial " standard troy pound shall be lost, or shall be in any manner destroyed, " defaced, or otherwise injured, it shall and may be restored by making, " under the direction of the Lord High Treasurer, or the Commissioners " of his Majesty's Treasury of the United Kingdom of Great Britain " and Ireland, or any three of them for the time being, a new standard " troy pound, bearing the same proportion to the weight of a cubic inch " of distilled water, as the said standard pound hereby established bears " to such cubic inch of water."

And by a law passed in the year 1835, (5 & 6 Gulielmi IV., cap. 63,) the use of any other weights besides those above described, and the apothecaries' weight, is rendered illegal, and it is enacted, " That " from and after the passing of this act, all articles sold by weight " shall be sold by avoirdupois weight, except gold, silver, platina, " diamonds, or other precious stones, which may be sold by troy weight, " and drugs, which, when sold by retail, may be sold by apothecaries' " weight."

The following, then, are the three kinds of weight now recognised by law in this country:—

AVOIRDUPOIS, OR IMPERIAL WEIGHT.

								Equivalents in Troy grains.
1 dram								27·34375
16 =	1 ounce							437·5
256 =	16 =	1 pound						7000·
3584 =	224 =	14 =	1 stone					98000·
28672 =	1792 =	112 =	8 =	1 hundred weight				784000·
473440 =	35840 =	2240 =	160 =	20 =	1 ton			15680000·

TROY WEIGHT.

1 grain.
24 = 1 pennyweight.
480 = 20 = 1 ounce.
5760 = 240 = 12 = 1 pound.

APOTHECARIES' WEIGHT.

(*Adopted by the London and Edinburgh Colleges.*)

	Symbols.
1 grain	gr.
20 = 1 scruple	℈
60 = 3 = 1 drachm . . .	ʒ
480 = 24 = 8 = 1 ounce . . .	℥
5760 = 288 = 96 = 12 = 1 pound . .	℔

The Dublin College of Physicians, in their Pharmacopœia of 1850, rejected the troy pound and its sub-multiples, and substituted the avoirdupois or imperial pound, of 7000 grains, making, however, a new division of this weight, coinciding with that of the apothecaries' weight, as shown in the following table :—

DUBLIN WEIGHTS.

(*Adopted by the Dublin College, in their Pharmacopœia of* 1850.)

	Symbols.
1 grain	gr.
18·22 = 1 scruple	℈
54·68 = 3 = 1 drachm . . .	ʒ
437·5 = 24 = 8 = 1 ounce . .	℥
7000· = 384 = 128 = 16 = 1 pound .	℔

The apothecaries' weight is that alone the use of which is recognised by the London and Edinburgh Colleges of Physicians, in the preparation or dispensing of medicines, either according to the Pharmacopœia, or extemporaneous prescriptions. It is not, however, customary for pharmaceutical chemists to keep any large weights of this description ; and, therefore, in preparing medicines on the large scale, it is necessary to calculate the equivalents of the weights ordered in avoirdupois weight, the latter being the only kind of large weights generally used. The following table has been prepared for the purpose of facilitating such calculations :—

EQUIVALENTS IN TROY AND AVOIRDUPOIS WEIGHT.

Troy grains.	Troy.				Avoirdupois.		
	lbs.	oz.	drs.	grs.	lbs.	oz.	grs.
60			1				60
120			2				120
240			4				240
437·5			7	17·5		1	
480		1				1	42·5
875		1	6	35		2	
960		2				2	85
1312·5		2	5	52·5		3	
1440		3				3	127·5
1750		3	5	10		4	
1920		4				4	170
2187·5		4	4	27·5		5	
2400		5				5	212·5
2625		5	3	45		6	
2880		6				6	255
3062·5		6	3	2·5		7	
3360		7				7	297·5
3500		7	2	20		8	
3840		8				8	340
3937·5		8	1	37·5		9	
4320		9				9	382·5
4375		9	0	55		10	
4800		10				10	425
4812·5		10		12·5		11	
5250		10	7	30		12	
5280		11				12	30
5687·5		11	6	47·5		13	
5760	1					13	72·5
6125	1	0	6	5		14	
6562·5	1	1	5	22·5		15	
7000	1	2	4	40	1		
7680	1	4			1	1	242·5
9600	1	8			1	5	422·5
10500	1	9	7		1	8	
11520	2				1	10	145
14000	2	5	1	20	2		
17280	3				2	7	217·5
21000	3	7	6	0	3		
23040	4				3	4	290
28000	4	10	2	40	4		
28800	5				4	1	362·5
34560	6				4	14	435
35000	6	0	7	20	5		
40320	7				5	12	70

EQUIVALENTS IN TROY AND AVOIRDUPOIS WEIGHT.

Troy grains.	Troy.				Avoirdupois.		
	lbs.	oz.	drs.	grs.	lbs.	oz.	grs.
42000	7	3	4	0	6		
46080	8				6	9	142·5
49000	8	6	0	40	7		
51840	9				7	6	215
56000	9	8	5	20	8		
57600	10				8	3	287·5
63000	10	11	2	0	9		
63360	11				9	0	360
69120	12				9	13	432·5
70000	12	1	6	40	10		
74880	13				10	11	67·5
77000	13	4	3	20	11		
80640	14				11	8	140
84000	14	7	0	0	12		
86400	15				12	5	212·5
91000	15	9	4	40	13		
92160	16				13	2	285
97920	17				13	15	357·5
98000	17	0	1	20	14		
103680	18				14	12	430
105000	18	2	6	0	15		
109440	19				15	10	65
112000	19	5	2	40	16		
115200	20				16	7	137·5
119000	20	7	7	20	17		
120960	21				17	4	210
126000	21	10	4	0	18		
126720	22				18	1	282·5
132480	23				18	14	355
133000	23	1	0	40	19		
138240	24				19	11	427·5
140000	24	3	5	20	20		
144000	25				20	9	62·5
147000	25	6	2	0	21		
149760	26				21	6	135
154000	26	8	6	40	22		
155520	27				22	3	207·5
161000	27	11	3	20	23		
161280	28				23	0	280
167040	29				23	13	352·5
168000	29	2	0	0	24		
172800	30				24	10	425
175000	30	4	4	40	25		
178560	31				25	8	59
182000	31	7	1	20	26		

EQUIVALENTS IN TROY AND AVOIRDUPOIS WEIGHT.

Troy grains.	Troy.				Avoirdupois.		
	lbs.	oz.	drs.	grs.	lbs.	oz.	grs.
184320	32				26	5	131·5
189000	32	9	6	0	27		
190080	33				27	2	204
195840	34				27	15	276·5
196000	34	0	2	40	28		
201600	35				28	12	149
203000	35	2	7	20	29		
207360	36				29	9	421·5
210000	36	5	4	0	30		
230400	40				32	14	275
280000	48	7	2	40	40		
288000	50				41	2	125
345600	60				49	5	412·5
350000	60	9	1	20	50		
403200	70				57	9	262·5
420000	72	11	0	0	60		
460800	80				65	13	113
490000	85	0	6	40	70		
518400	90				74	0	400·5
560000	97	2	5	20	80		
576000	100				82	4	250·5
630000	109	4	4	0	90		
645120	112				92	2	245
700000	121	6	2	40	100		
784000	136	1	2	40	112		

FOREIGN WEIGHTS.

FRENCH WEIGHTS.—Previous to the revolution of 1789, the weight called "*poids de marc*," the unit of which was the pound of Charlemagne, was that almost exclusively used in France. This was divided in the following manner :—

OLD FRENCH WEIGHT.

	Equivalents in English troy grains.		Equivalents in French grammes.
1 grain	0·8203	...	0·0531
24 = 1 scruple	19·687	...	1·274
72 = 3 = 1 gros or dragme . . .	59·070	...	3·824
576 = 24 = 8 = 1 once	472·562	...	30·594
4608 = 192 = 64 = 8 = 1 marc . . .	3780·500	...	244·750
6612 = 288 = 96 = 12 = 1 livre medicinal . .	5670·750	...	367·125
9216 = 384 = 128 = 16 = 1 { livre marchand / or poid de marc } .	7561·000	...	489·500

During the progress of the revolution, a new system of weights and measures was introduced by the government, which has been called the decimal system. According to this system the ten-millionth part of a quarter of the meridian of the earth is taken as the unit from which all other measures are calculated. This unit is called the *mètre* (from μέτρον, measure). It is divided into ten parts, each of which is called a *decimètre;* and this is again divided into ten parts, each of which is called a *centimètre.* A cubic décimètre is taken as the unit of measures of capacity, and is called a *litre.* A cubic centimètre of distilled water, at its *maximum* density, that is, at a temperature of 39·5° Fahrenheit, is the unit of weights, and is called a *gramme.* There is some discrepancy in the value assigned to the gramme by different authors, as expressed in relation to English weights. It is sometimes represented = 15·44242 Troy grains, but these numbers are too high. In the previous edition of this work, the gramme was described as = 15·434 grains, this value having been assigned to it from experiments made at our Mint. The subject has been more recently and accurately investigated by Professor Miller, of Cambridge, who has found the kilogramme to be = 15432·3488 grains, of which the English standard pound contains 7000·000.

In the following table the French decimal weights are given, with their equivalents in English troy and avoirdupois weights:—

French Decimal Weight.								English Weights.							
								Equivalents in Troy Weight.				Equivalents in Avoirdupois Weight.			Equivalents in Troy Grains.
Myriogramme.	Kilogramme.	Hectogramme.	Decagramme.	Gramme.	Decigramme.	Centigramme.	Millegramme.	lbs.	oz.	drs.	grs.	lbs.	oz.	troy grs.	
							1								·0154
						1	10								·1543
					1	10	100				1·5			1·5	1·5432
				1	10	100	1000				15·4			15·4	15·432
			1	10	100	1000	10000			2	34			154	154·323
		1	10	100	1000	10000	100000		3	1	43		3	230·7	1543·234
	1	10	100	1000	10000	100000	1000000	2	8	1	12	2	3	119·8	15432·348
1	10	100	1000	10000	100000	1000000	10000000	26	9	4	3	22	0	323·4	154323·488

A table for converting French decimal weights into English weights is given at page 35.

Several laws have been passed, at different periods, to render the decimal system of weights and measures obligatory throughout France, but for many years it was found impossible to overcome the prejudices of the people in favour of the old system.

In 1812 an attempt was made to amalgamate the old and new systems, by altering the old pound, or *livre*, making it equal to the half kilogramme, taking this as the unit, and calculating the other divisions from this, according to the old nomenclature. The following table contains this system of weights, with the equivalents in French grammes, and in English avoirdupois weight.

FRENCH WEIGHTS OF 1812.

French weights of 1812.		Decimal weight grammes.		English avoirdupois. lb.	oz.	drs.	grains.
1 livre	=	500	=	1	1	10	11·07
½ ,,	=	250	=		8	13	5·53
¼ ,,	=	125	=		4	6	16·18
2 once	=	62·5	=		2	3	8·9
1 ,,	=	31·25	=		1	1	17·71
½ ,,	=	15·625	=			8	22·52
2 gros	=	7·812	=			4	11·26
1 ,,	=	3·906	=			2	5·63
½ ,,	=	1·9021	=			1	2·81
1 grain	=	0·0542	=				0·90

The adoption of this system was not made obligatory upon the pharmaciens by law until the year 1827; and indeed it appears never to have been generally adopted, the greatest confusion having prevailed with regard to the weights and measures used in the preparation of medicine, as well as in commerce generally, up to the year 1840. In July 1837, a law was passed which definitively abolished the use of all other weights and measures, excepting those of the decimal system, from and after August 1840. The Decimal Weight, therefore, is now the only one permitted to be used throughout France.

The Medicinal Weights, used in the principal countries in continental Europe, are represented in the following tables, the third of which gives the equivalents in English troy grains, according to the calculations of Soubeiran and Christison:—

1. SPANISH, TUSCAN, ROMAN, AND OLD FRENCH MEDICAL WEIGHTS.

1 grain.
24 = 1 scruple.
72 = 3 = 1 drachm.
576 = 24 = 8 = 1 ounce.
6912 = 288 = 96 = 12 = 1 pound.

2. AUSTRIAN, GERMAN, RUSSIAN, PRUSSIAN, DUTCH, BELGIAN, SWEDISH, PIEDMONTESE, AND VENETIAN MEDICINAL WEIGHTS.

1 grain.
20 = 1 scruple.
60 = 3 = 1 drachm.
480 = 24 = 8 = 1 ounce.
5760 = 288 = 96 = 12 = 1 pound.

The value of the grain in several of the above countries differs, as will be seen in the following table:—

VALUE OF CONTINENTAL MEDICINAL WEIGHTS IN TROY GRAINS.

	Pound.	Ounce.	Dram.	Scruple consisting of 24 grains.	Scruple consisting of 20 grains.	Grain.
French, (Old)	5670·7	472·50	59·07	19·68		0·820
Spanish	5320·4	443·49	55·44	18·47		0·769
Tuscan	5240·3	436·67	54·58	18·19		0·758
Roman	5235·0	436·25	54·53	18·17		0·757
Austrian	6495·1	541·25	67·65		22·55	1·127
German	5524·8	460·40	57·55		19·18	0·960
Russian	5524·8	460·40	57·55		19·18	0·960
Prussian	5415·1	451·26	56·40		18·80	0·940
Dutch	5695·8	474·64	59·33		19·78	0·988
Belgian	5695·8	474·64	59·33		19·78	0·988
Swedish	5500·2	458·34	57·29		19·09	0·954
Piedmontese	4744·7	395·39	49·45		16·48	0·824
Venetian	4661·4	388·45	48·55		16·18	0·809

Weights in Use in British India.*—The unit of the British Indian ponderary system is called the tola. It weighs 180 grains English troy weight. From it upwards are derived the heavy weights, viz., *chitak*, *seer*, and *mun*, or *maund;* and by its subdivision the small, or jeweller's weights, called *mashas*, *ruttees*, *and dhans*.

In the following table, the equivalents for these are given in troy weight :—

BRITISH INDIAN WEIGHTS.

							Equivalents in Troy weight.
1 dhan							·4687
4 =	1 ruttee						1·875
32 =	8 =	1 masha					15·
384 =	96 =	12 =	1 tola or rupee				180·
1920 =	480 =	60 =	5 =	1 chitak		lb. oz.	900·
30720 =	7680 =	960 =	80 =	16 =	1 seer	2 6	
153600 =	38400 =	4800 =	400 =	80 =	5 = 1 pusseree	12 6	
1228800 =	307200 =	38400 =	3200 =	640 =	40 = 8 = 1 mun	100 0	

The *mun* (or that weight to which it closely accords in value, and to which it is legally equivalent in the new scale) has been hitherto better known among Europeans by the name of *bazaar maund;* but upon its general adoption, under regulation vii., 1833, for all transactions of the British government, it should be denominated the *British maund*, (in the Hindee, *Ungrezee mun*,) to distinguish it at once from all other weights in use throughout the country.

The *seer* being the commonest weight in use in the Indian bazaar, and being liable, according to the pernicious system hitherto prevalent,

* O'Shaughnessy's Bengal Dispensatory, from *Princep's Useful Tables*, and Rushton's Bengal and Agra Gazetteer.

to vary in weight for every article sold, as well as for every market, is generally in native mercantile dealings referred to the common unit for distinction, as "the seer of so many tolas" (or *siccas*, *barees*, *takas*, &c.) The standard, or bazaar seer, is always eighty tolas.

The *tola* is chiefly used in weighing the precious metals and coin. All bullion at the mints is received by this denomination of weight.

The following is the system of weights to be adopted in the forthcoming BENGAL PHARMACOPŒIA.

"To ensure perfect uniformity in the preparation and doses of medicines, and at the same time to provide a standard universally and easily obtained, we have adopted as the basis of our system, both of weights and measures, *the Honourable East India Company's new rupee.*

"By numerous experiments it has been ascertained that the *new rupee* or *tola*, as found in circulation, is exactly equal to 180 English pharmaceutical grains.

"The half rupee and quarter rupee (silver) of the new currency are equal to 90 and 45 grains each.

"The new copper *pice* is equal to 100 grains.

"The quarter rupee (silver) we divide into 45 equal parts, each termed one grain."

"Having thus derived the grain weight equivalent to one grain troy, other denominations of weights are formed, corresponding with the English apothecaries' weight, which weights are to be used in dispensing medicines."

OTHER FOREIGN WEIGHTS.

Tchegy, the pound by which drugs are sold in Turkey = 4957 English grains. It is divided into 100 drachms; each *drachm* into 16 killos; and each *killo* into 4 *grains*.

Loth, in Germany = ½ an ounce.

Obolo (Spanish), = ½ a Spanish scruple; 3 *silicua* = 1 *obolo*; 4 *grains* = 1 silicua.

ENGLISH MEASURES.

Before the passing of the Act, 5th & 6th William IV. cap. 63, in 1835, there were several measures of extension and capacity employed in this country. Laws had frequently been passed, from an early period in our history, for the regulation of these, in common with weights. King Henry I. commanded that the ulna, or ancient ell, which answers to the modern yard, should be made of the exact length of his own arm; and by the statute called "Compositio Ulnarum et Perticarum," it was enacted that three grains of barley make one inch; 12 inches one foot; 3 feet one yard; and 5½ yards one perch.

LONG MEASURE.

1 inch.
12 = 1 foot.
36 = 3 = 1 yard.
72 = 6 = 2 = 1 fathom.
198 = 16½ = 5½ = 1 pole, perch, or rod.
7920 = 660 = 220 = 40 = 1 furlong.
63360 = 5280 = 1760 = 320 = 8 = 1 mile.
190080 = 15840 = 5280 = 960 = 24 = 3 = 1 league.

CORN MEASURE.

1 pint.
2 = 1 quart.
4 = 2 = 1 pottle.
8 = 4 = 2 = 1 gallon.
16 = 8 = 4 = 2 = 1 peck.
64 = 32 = 16 = 8 = 4 = 1 bushel.
512 = 256 = 128 = 64 = 32 = 8 = 1 quarter.
2560 = 1280 = 640 = 320 = 160 = 40 = 5 = 1 load, wey, or ton.
5120 = 2560 = 1280 = 640 = 320 = 80 = 10 = 2 = 1 last.

The gallon of this measure contains 268·8 cubic inches, and the bushel, which was called the Winchester bushel, 2150·42 cubic inches.

ALE AND BEER MEASURE.

1 pint.
2 = 1 quart.
8 = 4 = 1 gallon.
288 = 144 = 36 = 1 barrel.
432 = 216 = 54 = 1½ = 1 hogshead.
576 = 288 = 72 = 2 = 1⅓ = 1 puncheon.
864 = 432 = 108 = 3 = 2 = 1½ = 1 butt.
1728 = 864 = 208 = 6 = 4 = 3⅓ = 2 = 1 tun.

The gallon of this measure contains 282 cubic inches.

WINE MEASURE.

1 pint.
2 = 1 quart.
8 = 4 = 1 gallon.
336 = 168 = 42 = 1 tierce.
504 = 252 = 63 = 1½ = 1 hogshead.
672 = 336 = 84 = 2 = 1⅓ = 1 puncheon.
1008 = 504 = 126 = 3 = 2 = 1½ = 1 pipe or butt.
2016 = 1008 = 252 = 6 = 4 = 3 = 2 = 1 ton.

The gallon of this measure contains 231 cubic inches. The wine gallon and ale gallon have the same proportion to each other that the troy pound and avoirdupois pound have.

Imperial Measure.—By the Act, 5th Geo. IV. cap. 74, already referred to, it is enacted, "That from and after the first day of May, "1825, the straight line or distance between the centres of the two "points in the gold studs in the straight brass rod, now in the custody "of the Clerk of the House of Commons, whereon the words and figures, "'standard yard, 1760,' are engraved, shall be, and the same is hereby "declared to be the original and genuine standard of that measure of "length or lineal extension called a yard; and that the same straight "line or distance between the centres of the said two points in the "said gold studs in the said brass rod, the brass being at the tempera-"ture of 62 degrees of Fahrenheit's thermometer, shall be, and is "hereby denominated, the 'imperial standard yard;' and shall be and "is hereby declared to be the unit or only standard measure of exten-"sion, wherefrom or whereby all other measures of extension whatso-"ever, whether the same be lineal, superficial, or solid, shall be derived, "computed, and ascertained; and that all measures of length shall be "taken in parts or multiples, or certain proportions of the said standard "yard; and that one-third part of the said standard yard shall be a "foot, and the twelfth part of such foot shall be an inch; and that the "pole or perch in length shall contain 5½ such yards, the furlong 220 "such yards, and the mile 1760 such yards."

"And whereas it is expedient that the said standard yard, if lost, "destroyed, defaced, or otherwise injured, should be restored of the "same length, by reference to some invariable natural standard: and "whereas it has been ascertained by the Commissioners appointed by "his Majesty to inquire into the subject of weights and measures, that "the said yard hereby declared to be the imperial standard yard, "when compared with a pendulum vibrating seconds of mean time in "the latitude of London, in a vacuum at the level of the sea, is in the "proportion of thirty-six inches to thirty-nine inches and one thousand "three hundred and ninety-three ten thousandth parts of an inch; "(36 : 39·1393); be it therefore enacted and declared, that if at any "time hereafter the said imperial standard yard shall be lost, or shall "be in any manner destroyed, defaced, or otherwise injured, it shall "and may be restored by making, under the direction of the Lord "High Treasurer, or the Commissioners of his Majesty's Treasury of "the United Kingdom of Great Britain and Ireland, or any three of "them, for the time being, a new standard yard, bearing the same pro-"portion to such pendulum as aforesaid, as the said imperial standard "yard bears to such pendulum."

"And be it further enacted, that from and after the first day of "May, 1825, the standard measure of capacity, as well for liquids as "for dry goods not measured by heaped measure, shall be the gallon, "containing ten pounds avoirdupois weight of distilled water weighed "in air, at the temperature of 62° Fahr., the barometer being at "thirty inches; and that a measure shall be forthwith made of brass, "of such contents as aforesaid, under the directions of the Lord High "Treasurer, or the Commissioners of his Majesty's Treasury of the "United Kingdom, or any three or more of them, for the time being; "and such brass measure shall be, and is hereby declared to be, the

"imperial standard gallon, and shall be, and is hereby declared to be, "the unit and only standard measure of capacity, from which all "other measures of capacity to be used, as well for wine, beer, ale, "spirits, and all sorts of liquids, as for dry goods not measured by "heaped measure, shall be derived, computed, and ascertained; and "that all measures shall be taken in parts or multiples, or certain "proportions of the said imperial standard gallon; and that the quart "shall be the fourth part of such standard gallon, and the pint shall "be one-eighth of such standard gallon, and that two such gallons "shall be a peck, and eight such gallons shall be a bushel, and eight "such bushels a quarter of corn or other dry goods, not measured by "heaped measure."

And by the Act passed in September, 1835 (5th and 6th William IV. cap. 63), it is enacted, "That from and after the passing of this "Act, the measure called the Winchester bushel, and the lineal "measure called the Scotch ell, and all local or customary measures, "shall be abolished; and every person who shall sell by any deno- "mination of measure other than one of the imperial measures, or "some multiple, or some aliquot part, such as half, the quarter, the "eighth, the sixteenth, or the thirty-second parts thereof, shall, on "conviction, be liable to a penalty not exceeding the sum of forty "shillings for every such sale: provided always that nothing herein "contained shall prevent the sale of any articles in any vessel, where "such vessel is not represented as containing any amount of imperial "measure, or of any fixed, local, or customary measure heretofore in "use."

In the adoption of the new imperial measure, there is no exception made for medicines, as in the case of weights; and the use of any other than the imperial measure is therefore illegal in the sale of these as well as every other article of commerce.

IMPERIAL MEASURE.

	Equivalents in Avoirdupois weight.	Equivalents in Troy weight.
	Of distilled water at 62° Fahrenheit.	
1 pint	1·25 lb	8750 grains.
2 = 1 quart	2·5 „	17500 „
8 = 4 = 1 gallon	10· „	70000 „
16 = 8 = 2 = 1 peck	20· „	140000 „
64 = 32 = 8 = 4 = 1 bushel	80· „	560000 „
512 = 256 = 64 = 32 = 8 = 1 quarter	640· „	4480000 „

APOTHECARIES' MEASURE.

(*Adopted by the London and Edinburgh Colleges*).

	Equivalents in Troy grains.
1 minim	0·91
60 = 1 fluidrachm	54·7
480 = 8 = 1 fluidounce	437·5
9600 = 160 = 20 = 1 pint	8750·
76800 = 1280 = 160 = 8 = 1 gallon	70000·

APOTHECARIES' MEASURE.

(*Adopted by the Dublin College, in their Pharmacopœia of* 1826.)

	Equivalents in Troy grains of distilled water at 60° Fahr. (Dublin Pharm., 1826.)	Equivalents in Troy grains. (Christison's Dispensatory.)
1 grain measure .	1 grain very nearly	0·95 grains.
1 scruple measure .	19 ,, ,,	18·948 ,,
1 drachm measure .	57 ,, ,,	56·95 ,,
1 ounce measure .	456·5 ,, ,,	455·6075 ,,
1 pint measure .	7291· ,, ,,	7289·725 ,,
1 gallon measure .	58327·5 ,, ,,	58317·798 ,,

The Dublin College direct, that wherever the term *Libra* occurs in their Pharmacopœia of 1826, as applied to liquids, it is to be understood as *a pint by measure.*

APOTHECARIES' MEASURE.

(*Adopted by the Dublin College, in their Pharmacopœia of* 1850.)

	Symbols.
1 minim	♏
20 = 1 fluid scruple	fl ℈
60 = 3 = 1 fluid drachm	fl ʒ
480 = 24 = 8 = 1 fluid ounce	fl ℥
9600 = 480 = 160 = 20 = 1 pint	O
76800 = 3840 = 1280 = 160 = 8 = 1 gallon . . .	C

"The term *libra*, which properly signifies a pound, has been also used to designate a pint; but as the imperial pint of water weighs $1\frac{1}{4}$ pound, such application of the term is no longer proper."—*Dublin Pharmacopœia*, 1850.

Relation between the Old, or Wine Measure, formerly used in Medicine, and the New or Imperial Measure.

WINE MEASURE.

	Equivalents in cubic inches.	Equivalents in Troy grains of distilled water at 60° Fahr.
1 gallon	= 231·	= 58317·798
1 quart	= 57·75	= 14579·4495
1 pint	= 28·875	= 7289·72475
16 ounces	= 28·875	= 7289·72475
1 ounce	= 1·8046	= 455·6075

IMPERIAL MEASURE.

	Equivalents in cubic inches.	Equivalents in Troy grains of distilled water at 62° Fahr.
1 gallon	= 277·274	= 70000
1 quart	= 69·3185	= 17500
1 pint	= 34·65925	= 8750
16 ounces	= 27·72740	= 7000
1 ounce	= 1·73296	= 437·5

The weight of 1 cubic inch of distilled water weighed in air at 62° Fahr. is stated in the Act of Parliament (see page 20) to be 252·458 Troy grains; but this is probably not strictly correct.

FOREIGN MEASURES.

OLD FRENCH MEASURE, CALLED PARIS LONG MEASURE.

The French toise	=	6·3945	English feet.
The Paris royal foot of 12 inches . .	=	12·7895	English inches.
The inch	=	1·0657	„ „
The line, or $\frac{1}{12}$ of an inch . . .	=	·0888	„ „
The $\frac{1}{12}$ of a line	=	·0074	„ „

To reduce Paris feet or inches into English, multiply by } 1·065977
To convert English feet or inches into Paris, divide by }

To reduce Paris cubic feet or inches to English, multiply by } 1·211278
To convert English cubic feet or inches to Paris, divide by }

OLD FRENCH MEASURES OF CAPACITY.

Poisson	=	3·631	English cubic inches.
Paris pint	=	58·145	„ „
Litron	=	49·617	„ „
Boisseau	=	793·856	„ „
Minot	=	1·378	cubic feet.
Mine	=	2·756	„
Setier	=	5·512	„
Muid	=	66·146	„

To reduce the Paris pint to the English imperial pint, divide by . . . . . } 1·677618
To convert the English imperial pint to the Paris pint, multiply by . . . . . }

FOREIGN MEASURES.

Kanne, or *Mass*, (Austria)	= 1·415	litres.
Kanna, (Sweden)	= 2·62	„
Mass, (Wurtemburg)	= 1·837	„
Pott, (Denmark)	= 0·9653	„
Arroba, (Spain)	= 16·073	„
Almude, (Portugal)	= 16·451	„
Quart, (Prussia)	= 1·145	„
Barile, (Naples)	= 43·621	„
Do., (Rome)	= 58·341	„
Do., (Tuscany)	= 45·584	„
Wedro, (Russia)	= 12·29	„

NEW FRENCH MEASURES, CALLED THE DECIMAL MEASURES.

The use of any other measures but these was made illegal by the law passed in 1837, and which came into operation in January, 1840.

FRENCH MEASURES OF LENGTH.

(*The French measure being at* 32° *Fahr., and the English at* 62° *Fahr.*)

	English inches.	English Long Measure.				
		miles.	furls.	yards.	feet.	inches.
Millimetre =	·03937					
Centimetre =	·39371					
Decimetre =	3·93708					
Metre =	39·37079	= 0	0	1	0	3·7
Decametre =	393·70790	= 0	0	10	2	9·7
Hectometre =	3937·07900	= 0	0	109	1	1
Kilometre =	39370·79000	= 0	4	213	1	10
Myriametre =	393707·90000	= 6	1	156	0	0

FRENCH MEASURES OF CAPACITY.

	English cubic inches.	English Apothecaries' Measure.				
		galls.	pts.	ozs.	drs.	m.
Millitre . . .	·0610					16·9
Centilitre . .	·6103				2	50
Decilitre . .	6·1027			3	4	13
Litre . . .	61·027		1	15	2	11
Decalitre . .	610·27	2	1	12	5	51
Hectolitre . .	6102·7	22	0	7	3	8
Kilolitre . .	61027·	220	3	13	7	30
Myrialitre . .	610270·	2204	4	10	3	

The annexed table is used in the same way as the tables given in works on *Analytical Chemistry*. The figures in the first horizontal line represent the number of any denomination of French measures or weights (expressed in capitals in the first vertical column), the equivalents for which in English measures or weights are required. The figures opposite the several denominations of English measures or weights are the equivalents for the French measures or weights, and each vertical column gives the several values of the number of French measures or weights indicated by the figure at the top of the column. Thus, 1 metre = 1·09363 English yards, or 3·28090 feet, or 39·37080 inches. 2 decimetres = 0·65618 feet. 4 litres = 7·04531 pints. 5 kilogrammes = 77161·7440 grains. 1 gramme = 15·4323488 grains, &c. The nine columns of numbers, therefore, give the values, respectively, of 1, 2, 3, 4, 5, 6, 7, 8, and 9, of each of the denominations of French measures or weights specified. If it be required to get the values of 10, 20, 30, 40, &c., instead of 1, 2, 3, 4, &c., of any denomination of French measure or weight, it is only necessary, in the line of figures in which the values are expressed, to remove the decimal point over one figure towards the right hand. Thus the value of 10 metres is 10·9363 yards, and the value of 20 decimetres is 6·5618 feet. In this way the units may be converted into tens, hundreds, &c., by shifting the decimal point towards the right. In like manner the whole numbers may be converted into decimals, and their values ascertained by shifting the decimal point towards the left hand. An illustration will render the

TABLE FOR CONVERTING FRENCH DECIMAL MEASURES AND WEIGHTS INTO ENGLISH MEASURES AND WEIGHTS.

	1	2	3	4	5	6	7	8	9
METRE:—									
English Yards . . .	1·09363	2·18727	3·28090	4·37453	5·46816	6·56180	7·65543	8·74906	9·84270
„ Feet . . .	3·28090	6·56180	9·84270	13·12360	16·40450	19·68539	22·96629	26·24719	29·52809
„ Inches . . .	39·37080	78·74158	118·11236	157·48315	196·85394	236·22473	275·59552	314·96630	354·33709
DECIMETRE:—									
Feet	0·32809	0·65618	0·98427	1·31236	1·64045	1·96854	2·29663	2·62472	2·95281
Inches	3·93708	7·87416	11·81124	15·74832	19·68539	23·62247	27·55955	31·49663	35·43371
CENTIMETRE:—									
Inches	0·39371	0·78742	1·18112	1·57483	1·96854	2·36225	2·75596	3·14966	3·54337
MILLIMETRE:—									
Inches	0·03937	0·07874	0·11811	0·15748	0·19685	0·23623	0·27560	0·31497	0·35434
LITRE:—									
English Imperial Gallons	0·22017	0·44033	0·66050	0·88066	1·10083	1·32100	1·54116	1·76133	1·98149
„ „ Pints .	1·76133	2·52266	5·28399	7·04531	8·80664	10·56797	12·32930	14·09062	15·85195
KILOGRAMME:—									
Grains	15432·3488	30864·6976	46297·0464	61729·3752	77161·7440	92594·0928	108026·4416	123458·7904	138891·1392
GRAMME:—									
Grains	15·4323488	30·8646976	46·2970464	61·7293752	77·1617440	92·5940928	108·0264416	123·4587904	138·8911392

mode of using the table evident. Let it be required to give the value of 461·32 grammes in English grains. The table shows that 4 grammes are = 61·7293752 grains. Now, by moving the decimal point over two figures towards the right hand, we get the value of 400 grammes, and by shifting the decimal point over one figure, in the numbers representing the value of 6 grammes, we get the value of 60 grammes. We thus get the result as follows :—

400·	grammes	=	6172·93752	grains.
60·	,,	=	925·94090	,,
1·	,,	=	15·43234	,,
·3	,,	=	4·62970	,,
·02	,,	=	·30864	,,
461·32	,,	=	7119·24910	,,

BAROMETER SCALE IN MILLIMETRES AND INCHES.

Milm.	Inches.	Milm.	Inches.	Milm.	Inches.
700	27·560	730	28·741	760	29·992
701	27·590	731	28·780	761	29·961
702	27·638	732	28·819	762	30·000
703	27·678	733	28·859	763	30·040
704	27·717	734	28·898	764	30·079
705	27·756	735	28·938	765	30·119
706	27·795	736	28·977	766	30·158
707	27·835	737	29·016	767	30·197
708	27·876	738	29·056	768	30·237
709	27·914	739	29·095	769	30·276
710	27·953	740	29·134	770	30·315
711	27·992	741	29·174	771	30·355
712	28·032	742	29·213	772	30·384
713	28·071	743	29·252	773	30·434
714	28·111	744	29·292	774	30·473
715	28·150	745	29·331	775	30·512
716	28·189	746	29·371	776	30·552
717	28·229	747	29·410	777	30·591
718	28·268	748	29·449	778	30·631
719	28·308	749	29·489	779	30·670
720	28·347	750	29·528	780	30·709
721	28·386	751	29·567	781	30·749
722	28·426	752	29·607	782	30·788
723	28·465	753	29·646	783	30·827
724	28·504	754	29·685	784	30·867
725	28 543	755	29·725	785	30·906
726	28·583	756	29·764	786	30·945
727	28·622	757	29·804	787	30·985
728	28·661	758	29·843	788	31·024
729	28·701	759	29 882	789	31·063

28	inches	=	711·187 millimetres.
29	,,	=	735·587 ,,
30	,,	=	761·986 ,,
31	,,	=	787·386 ,,

1	millimetre	=	0·03937 inch.	1	inch	=	25·39954 millimetres.
·1	,,	=	0·00394 ,,	·1	,,	=	2·53995 ,,
·01	,,	=	0·00039 ,,	·01	,,	=	0·25400 ,,
				·001	,,	=	0·02540 ,,

SPECIFIC GRAVITY.

The determination of the specific gravity of a body consists in estimating the weight of a given volume of it, as compared with an equal volume of some other body. The bodies usually taken as the standards of comparison are, *pure water* for solids and liquids, and *atmospheric air* for gases.

The specific gravity of a solid is determined by first weighing it, in the ordinary manner, with an accurate balance suspended in the air; then attaching a horse hair or fine silken thread to the solid body, immersing it in pure distilled water, and weighing it while thus immersed. The weight of the body in air, divided by the difference between its weight in air and its weight in water, will be its specific gravity. Thus a piece of lead is found to weigh 398 grains in air; when immersed in water, its weight is 362·4 grains; and the difference between these two weights, namely 35·6, is the weight of the volume of water displaced by the lead, or of a volume of water equal to that of the lead. The volume of water being taken as unity, the specific gravity of the lead is found by the following rule-of-three sum:—

35·6 : 1 : : 398 : 11·176, the specific gravity of the lead.

In taking the specific gravity of *a solid substance lighter than water*, some modification of the process is required; but we have, nevertheless, the same preliminary points to determine: first, the weight of the substance in air; and secondly, the weight of an equal volume of water. This may be illustrated by taking the specific gravity of a piece of wax. The weight of the wax in air is 105·4 grains. On immersing the wax in water, two pressures are exerted,—a pressure downwards equal to the gravity or weight of the wax, and a pressure upwards equal to the weight of the volume of water displaced by the wax; but the specific gravity of water being greater than that of wax, the upward pressure preponderates, and the wax rises to the surface. Thus we find, that a volume of water equal to that of the wax weighs as much as the wax, and something more. We must ascertain how much more; and this is done in the following manner:—Some body heavier than water, and the weight of which in water is known, is attached to the wax, and the two bodies are weighed in water together. A piece of lead may be used for this purpose. The lead alone weighs 378 grains in water; with the wax attached to it, the weight in water

is 372·4 grains, making a difference of 5·6 grains; and this 5·6 grains is equal to the excess of the upward over the downward pressure on the wax when immersed in water. Thus a volume of water equal to that of the wax weighs 5·6 grains more than the wax, or 105·4+5·6 = 111 grains.

Then, 111 : 1 : : 105·5 : 0·949, the specific gravity of the wax.

It sometimes happens that the solid substance, the specific gravity of which is to be determined, is *in powder*, or *in several small particles*. In such cases, it is found convenient to proceed as in the following method of taking the specific gravity of calomel:—

100 grains of calomel are introduced into a specific-gravity bottle, which holds 1000 grains of distilled water; the bottle is filled up with water, and the weight of the contents is found to be 1083·7 grains; deducting the weight of the calomel (100 grains) from this, the remainder (983·7 grains) will be the weight of the water in the bottle, and the difference (16·3 grains) between this and 1000 grains, the weight of the whole contents of the bottle when filled with distilled water, is the weight of a volume of water equal to the volume of the calomel.

Then, 16·3 : 1 : : 100 : 6·03, the specific gravity of the calomel.

In taking *the specific gravity of substances soluble in water*, other modifications of the process are required. Sometimes the substance may be covered with a thin coating of varnish, so as to protect it from the action of the water. This method answers very well for blue pill, which may be brushed over with a strong tincture of mastic, and then proceeded with as in the case of the lead. In other instances, however, it is necessary to pursue a different course. Thus, any powder that is soluble in water must have its specific gravity taken, in the first instance, with reference to some liquid in which it is not soluble.

Spirit of wine, oil of turpentine, or olive oil, may be used in such cases. The process may be illustrated by describing the method of taking the specific gravity of guano in oil of turpentine.

In the first place, the specific gravity of the oil of turpentine is ascertained to be 0·874. Then 100 grains of guano are introduced into a specific-gravity bottle, as in the case of the calomel; and the bottle being filled up with oil of turpentine, the weight of the contents is found to be 922·7 grains, from which, deducting 100 grains, the remainder (842·7 grains) will represent the oil not displaced by the guano; and this, deducted from 874 grains, the quantity of oil the bottle is capable of holding, leaves 51·3 grains as the weight of a volume of oil of turpentine equal to that of the guano. Now, 874 : 51·3 : : 1000 : 58·7, the weight of a volume of water equal to that of the guano.

Then, 58·7 : 1 : : 100 : 1·7, the specific gravity of the guano.

The methods by which *the specific gravities of liquids* are usually determined, may be divided into two classes:—

1st. Those which consist in filling any suitable vessel with the liquid to be estimated; ascertaining the weight of the contents, and dividing this by the weight of the same volume of water.

2ndly. Those which consist in displacing a portion of the liquid by some solid body floating in it, and estimating the specific gravity according to the weight and volume of the substance immersed, as compared with its immersion in water.

In the first case, the instruments employed are, a specific-gravity bottle, and an ordinary balance.

In the second case, the instruments used may be comprehended under the general terms of *hydrometers* or *arëometers*. These, however, are distinguished from each other—for there are many varieties of them—by different names, according to the particular purpose for which they are respectively intended, or from some peculiarity in their construction.

The specific-gravity bottle affords the most accurate means of determining the comparative densities of liquids. It consists, usually, of a globular bottle with a flat bottom and a slender neck, which holds exactly 1000 grains of distilled water at a certain fixed temperature. It is very easy at any time to test the accuracy of one of these bottles by a single experiment; and having ascertained that the bottle is correctly adjusted with regard to distilled water, the indications afforded with any other liquid will be equally trustworthy. The weight in grains, of the quantity of any liquid filling such bottle, will indicate its specific gravity.

Hydrometers, or *Arëometers*, are floating instruments, and their application for the purpose of determining the specific gravities of liquids depends upon the fact, that a body immersed in any liquid sustains a pressure from below, upwards, equal to the weight of the volume of the liquid displaced by such body.

The use of hydrometers for determining the specific gravities of liquids has been traced back to a period about 300 years before Christ; an instrument of this kind being described as the invention of Archimedes, the Sicilian mathematician. It subsequently fell into disuse, but was again brought into notice by Basil Valentine.

There are two kinds of hydrometers which may be taken as the types of all the different varieties in regard to construction:—

1st. Those which are always immersed in the liquids to be tried to the same depth, and to which weights are added to adjust the instrument to the density of any particular liquid. Of this description are Fahrenheit's, Nicholson's, and Guyton de Morveau's hydrometers.

2nd. Those which are always used with the same weight, but which sink into the liquids to be tried to different depths, according to the densities of the liquids. These usually have graduated scales attached to their stems. Of this description are the common glass hydrometers generally, including those of Baumé, Cartier, Gay Lussac, Twaddle, Zanetti, &c., and the specific-gravity beads.

Sikes's and Dicas's hydrometers combine the principles of both types, having moveable weights and graduated scales.

Hydrometers may also be divided into two classes, as follow:—

First. Those having a general application for determining the comparative densities of any liquids;

Second. Those intended for special application, as for estimating the

comparative strengths of spirits, or the comparative densities of syrups, oils, &c.

Fahrenheit's, Nicholson's, Guyton de Morveau's, and the common glass hydrometers, including Baumé's, Cartier's, Zanetti's, and the specific-gravity beads, belong to the first class.

Gay Lussac's, Sikes's, and Dicas's hydrometers, the Saccharometer, Urinometer, and Elaëometer belong to the second class.

Fahrenheit's Hydrometer consists of two glass bulbs blown in a glass tube, like a common hydrometer, excepting that the upper bulb is larger, and the stem, which is small, is terminated at the top in a cup or funnel. It has a mark on the middle of the stem, indicating the point at which the instrument is to be made to float, by means of weights put into the cup.

Nicholson's Hydrometer is a modification of Fahrenheit's. It is made of brass, and consists of a hollow globe, to which is fixed a slender stem surmounted by a cup; on the opposite side of the globe is another cup fixed in a kind of stirrup, and loaded so that this may always form the lowest point of the instrument when immersed in any liquid. There is a mark on the middle of the upper stem, indicating the point at which the instrument is to be made to float. A certain weight is introduced into the cup, to cause the instrument to sink to the proper mark in distilled water. On immersing the hydrometer into any other liquid, more or less weight will have to be put into the cup, according as such liquid is more or less dense than water. Thus the relative densities of liquids is determined.

This instrument is also applicable for taking the specific gravities of solids. If the solid substance be put into the cup as part of the weight required to sink the hydrometer in distilled water, the weight of the substance in air is ascertained; and if it be then put into the lower cup, immersed in the water, and the instrument again adjusted, its weight in water is ascertained; and from these its specific gravity is calculated.

Guyton de Morveau's hydrometer is similar to Fahrenheit's.

Baumé's hydrometers are used extensively in this country, as well as in France, and are applicable for all kinds of liquids. There are two distinct instruments, one for liquids lighter than water, and the other for liquids heavier than water. The latter is, for distinction, called the *Acidometer* or *Saccharometer* (*pèse-acide* or *pèse-sirop*); the former, the *Spirit Hydrometer* (*pèse-esprit*).

Baumé's Acidometer is made in the form of the common hydrometers. It consists of a glass tube terminated at the lower end by two bulbs, the lowest bulb being much smaller that the other, and intended to contain the ballast with which the instrument is loaded. The scale is marked on a slip of paper, or of ivory, fixed in the tube, and is adjusted in the following manner:—The top of the tube being open, the slip of paper on which the scale is to be marked is put into the stem, and the instrument is then immersed in pure distilled water; quicksilver is now dropped into the lower ball until the instrument sinks so low in the water that only the top of the stem remains above the surface, and a mark is made on the glass denoting exactly the point to

which it sinks. The instrument is now taken out of the pure water, and put into a solution of fifteen parts of common salt in eighty-five parts of distilled water, this solution being at the same temperature as the water in which the instrument was previously immersed. The point to which it sinks in this solution is to be marked on the stem as before, and the distance between the two marks being taken with a pair of compasses, and transferred to the slip of paper, the first is made the zero or 0, and the other the 15th degree of the scale. This distance being divided into fifteen equal parts or divisions, each division is called a degree, and the scale is completed by adding as many more degrees as the length of the stem will admit of. This being done, the slip of paper is again introduced into its place, and so fixed that the zero (0) of the scale shall be exactly opposite the first mark made on the glass. The end of the stem is now sealed with the flame of a blowpipe.

Baumé's Spirit Hydrometer is similar in form to the acidometer, but the weight of the instrument, and the scale, are different. In this case, the hydrometer is first immersed, as before, in pure distilled water; but it is made to float, so that the greater part of the stem shall be above the surface of the water. This point is marked, and the instrument is then transferred to a solution of ten parts of common salt in ninety parts of water, when another mark is made. The distance between these marks is made ten degrees of the scale, which are divided with the compasses, and marked on the slip of paper, as in the other case, the floating point in the solution of salt being made the zero, and the degrees carried upwards from this point.

The temperature at which these instruments were originally adjusted by Baumé, was 10° Reaumur, or 12·5 Centigrade; but those made in England are usually adjusted at 60° Fahrenheit. It is sometimes important to be aware of this difference.

Cartier's Hydrometer is much used in France. It is only applicable for liquids lighter than water. This instrument is a modification of Baumé's spirit hydrometer, the form of the instrument being the same, and the same point being taken as the zero of the scale; but the space which in Baumé's scale is divided into 32°, is in Cartier's divided into 30°.

It is becoming the common practice in this country to have the scales of hydrometers marked with the specific gravities intended to be indicated, and this is by far the most convenient kind of hydrometer for general use.

Twaddle's Hydrometers are much used by manufacturers for estimating the strength of saline and other solutions. They are made of glass like the common hydrometers, and are sold in sets of six. Each degree on the scale is equal to 0·005 of specific gravity; so that the specific gravity of a liquid is found, with these hydrometers, by multiplying the number of degrees indicated by 5, and adding 1000. Thus, 10° by Twaddle's hydrometer, $\times 5 + 1000 = 1{\cdot}050$ specific gravity.

Zanetti's Hydrometers, which are made at Manchester, are also sold in sets of six. With these the specific gravity is got by adding a cipher to the number of degrees indicated.

Specific-gravity beads, sometimes called *Lovi's beads*, are hollow sealed globes of glass, about the size of small pistol-bullets. Each bead is a small hydrometer, intended to indicate one fixed density, by its remaining half-way between the top and bottom of the liquid into which it is introduced. These beads are sold in sets. each one being marked with the specific gravity it is to indicate at a certain fixed temperature. They are very useful in making mixtures of any required densities, as, for instance, in making test acids.

Gay Lussac's Alcoholometre is frequently employed in France; it is adapted only for estimating the strength of spirits. The instrument is made like a common glass hydrometer, the scale of which is divided into 100 parts or degrees. The lowest division, marked 0, at the bottom of the scale, denotes the specific gravity of pure water at a temperature of 15° Cent., and the highest division, at the top of the scale, the specific gravity of absolute alcohol at the same temperature. The intermediate degrees indicate the number of volumes of absolute alcohol in 100 volumes of the spirit tried. The instrument is accompanied by a table for correcting the numbers marked on the scale, when it is used at any other temperature than that of 15° Cent.

Sikes's Hydrometer is used exclusively in the collection of the spirit revenue. It consists of a spherical ball or float, and an upper and a lower stem, made of brass; the upper stem has ten principal divisions, numbered 1, 2, 3, &c., which are each subdivided into five parts; the lower stem is made conical, and has a pear-shaped loaded bulb at its lower extremity. There are nine moveable weights, having the form of circular discs, and numbered 10, 20, 30, and so on to 90. Each of the circular weights is cut into its centre, so that it can be placed on the inferior conical stem, and slid down to the bulb; but in consequence of the enlargement of the cone, they cannot slip off at the bottom; but must be drawn up to the thin part for this purpose. The instrument is adjusted to strong spirit, specific gravity ·825, at 60° Fahr., this being reckoned as standard alcohol. In this spirit the instrument floats at the first division, 0, or zero, without a weight. In weaker spirit, having a greater density, the hydrometer will not sink so low, and if the density be much greater, it will be necessary to add one of the weights to cause the entire immersion of the bulb of the instrument. Each weight represents so many principal divisions of the stem as its number indicates: thus, the heaviest weight, marked 90, is equivalent to 90 divisions of the stem, and the instrument with this weight added floats at 0 in distilled water. As each principal division on the stem is divided into five, the instrument has a range of 500 degrees between *standard alcohol*, specific gravity ·825, and water. In using this instrument, it is immersed in the spirit, and pressed down by the hand to 0, till the whole divided part of the stem be wet. The force of the hand required to sink it will be a guide in selecting the proper weight. Having taken one of the circular weights, which is necessary for this purpose, it is slipped on the conical stem. The instrument is again immersed and pressed down as before to 0, and is then allowed to rise and settle at any point of the scale. The eye is then brought to the level of the surface of the spirit, and the part of

the stem cut by the surface, *as seen from below*, is marked. The number thus indicated by the stem is added to the number of the weight employed, and with this sum at the side, and the temperature of the spirits at the top, the strength *per cent.* is found in a table which accompanies the hydrometer. The strength is expressed in numbers denoting the excess or deficiency *per cent.* of proof spirit in any sample, and the number itself, having its decimal point removed two places to the left, becomes a factor, whereby the gauged contents of a cask or vessel of such spirit being multiplied, and the product being added to the gauged contents if over proof, or deducted from it if under proof, the result will be the actual quantity of proof spirit contained in such cask or vessel.

Dicas's Hydrometer is similar in construction to Sikes's, and it is used in a similar manner, with the same result, indicating the relation of the spirit tried to standard proof spirit.

It is the practice in commerce to designate the strength of spirit as so many degrees above or below proof, the Government having fixed upon what is called *proof spirit* as the standard in comparison with which the strength of all spirit shall be estimated. The term *proof* is said to have been derived from the ancient practice of trying the strength of spirit by pouring it over gunpowder in a cup, and then setting fire to the spirit; if, when the spirit had burned away, the gunpowder exploded, the spirit was said to be *over proof;* if, on the other hand, the gunpowder failed to ignite, in consequence of the water left from the spirit, it was said to be *under proof.* The weakest spirit capable of firing gunpowder in this way was called *proof spirit:* but it requires a spirit nearly of the strength of what is now called rectified spirit to stand this test. The *standard proof spirit* of the Excise is defined by law (56 Geo. III. cap. 140) to be "*that which at a temperature of* 51° *by Fahrenheit's thermometer, weighs exactly twelve-thirteenth parts of an equal measure of distilled water.*" This will have a specific gravity of ·923 at 51° Fahr., or about ·920 at 60° Fahr. The *standard alcohol* of the Excise is spirit the specific gravity of which is ·825 at 60° Fahr. By "spirit 60 degrees over proof," is understood a spirit 100 measures of which added to 60 measures of water, will form *standard proof spirit*, sp. gr. 920. By "spirit 10 degrees under proof," is understood a spirit 100 measures of which, mixed with 10 measures of standard alcohol, sp. gr. ·825, will form *standard proof spirit.*

Saccharometers, which are hydrometers intended for determining the density of syrups, are usually made and graduated in the same manner as Baumé's Acidometers, and differ only from these in being made smaller; but the scale is sometimes graduated to indicate the proportion of sugar in the solution.

The Urinometer is a small hydrometer, originally suggested by Dr. Prout, for estimating the density of urine. The scale is divided into 60 degrees, the zero being the point at which it floats in distilled water. The numbers on the scale, added to 1000, the assumed sp. gr. of water, give the specific gravities at the respective points: thus, supposing the number cut by the surface of the liquid to be 30, this

indicates a sp. gr. 1030. The letters H. S. on the back of the scale signify *healthy standard*, which ranges from 10° to 20° of the scale.

The Elaëometer is a very delicate glass hydrometer, intended for testing the purity of olive oil, or oil of almonds, by determining their densities. The 0 or zero of the scale is the point at which the instrument floats in *oil of poppy seeds.* The point at which it floats in *pure olive oil* is made the 50th degree, and the space between these two points is divided into 50 equal parts, and numbered accordingly. It floats at 38 or 38½° in *pure oil of almonds.*

The following tables have been drawn up for the purpose of showing the relations between the indications afforded by some of the foregoing instruments:—

TABLE OF THE PROPORTION BY WEIGHT OF ABSOLUTE ALCOHOL (SP. GR. ·7938) CONTAINED IN 100 PARTS OF SPIRITS OF DIFFERENT SPECIFIC GRAVITIES, AT 60° FAHR.

(*Fownes.*)

Specific Gravity.	Per cent. of Alcohol.	Specific Gravity.	Per cent. of Alcohol.	Specific Gravity.	Per cent. of Alcohol	Specific Gravity.	Per cent. of Alcohol.
·9991	0·5	·9638	26·	·9160	51·	·8581	76·
·9981	1·	·9623	27·	·9135	52·	·8557	77·
·9965	2·	·9609	28·	·9113	53·	·8533	78·
·9947	3·	·9593	29·	·9090	54·	·8508	79·
·9930	4·	·9578	30·	·9069	55·	·8483	80·
·9914	5·	·9560	31·	·9047	56·	·8459	81·
·9898	6·	·9544	32·	·9025	57·	·8434	82·
·9884	7·	·9528	33·	·9001	58·	·8408	83·
·9869	8·	·9511	34·	·8979	59·	·8382	84·
·9855	9·	·9490	35·	·8956	60·	·8357	85·
·9841	10·	·9470	36·	·8932	61·	·8331	86·
·9828	11·	·9452	37·	·8908	62·	·8305	87·
·9815	12·	·9434	38·	·8886	63·	·8279	88·
·9802	13·	·9416	39·	·8863	64·	·8254	89·
·9789	14·	·9396	40·	·8840	65·	·8228	90·
·9778	15·	·9376	41·	·8816	66·	·8199	91·
·9766	16·	·9356	42·	·8793	67·	·8172	92·
·9753	17·	·9335	43·	·8769	68·	·8145	93·
·9741	18·	·9314	44·	·8745	69·	·8118	94·
·9728	19·	·9292	45·	·8721	70·	·8089	95·
·9716	20·	·9270	46·	·8696	71·	·8061	96·
·9704	21·	·9249	47·	·8672	72·	·8031	97·
·9691	22·	·9228	48·	·8649	73·	·8001	98·
·9678	23·	·9206	49·	·8625	74·	·7969	99·
·9665	24·	·9184	50·	·8603	75·	·7938	100·
·9652	25·						

HYDROMETRICAL EQUIVALENTS.

Sp. Gr. at 60° Fahr.	100 parts contain of Alcohol Sp. Gr. 796. By Weight.	Water. By Weight.	1000 pts. contain of Standard Alc. Sp. Gr. 825.	Sikes	Baumé.	Cartier.	Per cent. of Alcohol, Sp. Gr. 796 by volume. Gay Lussac.
796	100	0			46·5	43·48	100
797	99·5	·5					99·75
798	99	1			46	43·06	99·50
799	98·67	1·33					99·25
800	98·33	1·67					99
801	98	2					98·75
802	97·67	2·33			45	42 14	98·50
803	97·33	2·67				42	98·28
804	97	3					98·15
805	96·67	3·33					98
806	96·33	3·67					97·80
806·5	96·17	3·83			44	41·22	97·70
807	96	4					97·60
808	95·5	4·5				41	97·40
809	95	5					97·29
809·5	94·89	5·10					97·10
810	94·67	5·33					97
811	94·33	5·67			43	40·34	96·75
812	94	6					96·50
813	93·67	6·33				40	96·25
814	93·33	6·67					96
815	93	7					95·75
816	92·5	7·5			42	39·40	95·50
817	92	8					95·25
818	91·67	8·33					95
818·6	91·5	8·5				39	94·90
819	91·33	8·67					94·75
820	91	9					94·50
821	91·5	9·5			41	38·46	94·25
822	90	10					94
823	89·67	10·33				38	93·75
824	89·33	10·67					93·50
825	89	11	1000	63· O.P.	40	37·55	93·25
826	88·5	11·5	993	62			93
827	88	12	988·5	61·5		37	92·6
828	87·67	12·33	984	61	39·5		92·3
829	87·33	12·67	979·5	60·5	39	36·63	91
830	87	13	975	60			91·7
831	86·5	13·5	970·5	59·5	38·5	36·17	91·35

HYDROMETRICAL EQUIVALENTS.

Sp. Gr. at 60° Fahr.	100 parts contain of Alcohol Sp. Gr. 796. By Weight.	Water.	1000 pts. contain of Standard Alc. Sp. Gr. 825.	Sikes.	Baumé.	Cartier.	Per cent. of Alcohol, Sp. Gr. 796 by volume. Gay Lussac.
832	86	14	966	59 O.P.		36	91
833	85·67	14·33	961·5	58·3			90·65
834	85·33	14·67	957	58	38	35·72	90·3
835	85	15	953	57·5			90
836	84·67	15·33	949	57	37·5	35·26	89·7
837	84·33	15·67	944·5	56·5			89·35
837·6	84·25	15·75	942·5	56·3		35	89·20
838	84	16	940	56			89
839	83·5	16·5	936	55·5	37	34·80	88·75
840	83	17	932	55			88·5
841	82·67	17·33	928	54·5	36·5		88·25
842	82·33	17·67	924	54		34·94	88
843	82	18	920	53·5		34	87·65
844	81·67	18·33	916	53	36	33·88	87·3
845	81·33	18·67	912	52·5			87
846	81	19	908	52			86·7
847	80·5	19·5	903	51	36·5	33·42	86·35
848	80	20	898	50			86
849	79·67	20·33	893	49·5			85·65
850	79·33	20·67	888	49	35	33	85·3
851	79	21	883	48·5			85
852	78·5	21·5	878	48	34·5	32·43	84·7
853	78	22	873	47·5			84·35
854	77·5	22·5	868	47			84
855	77	23	862·5	46·5	34	32·04	83·65
856	76·5	23·5	857	46			83·3
857	76	24	853	45·5	33·5	31·58	83
858	75·67	24·33	849	45			82·7
859	75·33	24·67	844·5	45			82·35
860	75	25	840	45	33	31·13	82
861	74·67	25·33	836·5	44·5		31	81·7
862	74·33	25·67	833	44			81·3
862·5	74·16	25·84	830·5	43·75	32·5	30·76	80
863	74	26	828	43·5			80·8
864	73·5	26·5	823	43			80·3
865	73	27	818	42·5	32	30·21	79·95
866	72·5	27·5	813	42			79·6
867	72	28	810	41			79·3
867·5	71·83	28·17	808·5	40·5	31·5	29·78	79·15
868	71·67	28·33	807	40			79

HYDROMETRICAL EQUIVALENTS.

Sp. Gr. at 60° Fahr.	100 parts contain of Alcohol Sp. Gr. 796. By Weight.	Water.	1000 pts. contain of Standard Alc. Sp. Gr. 825.	Sikes.	Baumé.	Cartier.	Per cent. of Alcohol, Sp. Gr. 796 by volume. Gay Lussac.
869	71·33	28·67	802·5	39·5 O.P.			78·65
870	71	29	798	39	31	29·29	78·3
871	70·5	29·5	792·5	38·5			78
872	70	30	787	38		29	77·7
873	69·5	30·5	781·5	37	30·5	28·83	77·35
874	69	31	776	36			77
875	68·67	31·33	772	35			76·5
876	68·33	31·67	768	34	30	28·38	76
877	68	32	762·5	33			75·65
877·5	67·75	32·25	759·25	32·5		28	75·5
878	67·5	32.5	757	32			75·3
878·5	67·25	32·75	753·75	31·5	29·5	27·91	75
879	67	33	751·5	31			74·8
880	66·5	33·5	746	30			74·3
881	66	34	742	29·5	29	27·44	74
882	65·5	34·5	738	29			73·7
883	65	35	733·5	28·5		27	73·35
883·5	64·83	35·17	731·25	28·25	28·5	26·99	73·17
884	64·67	35·33	729	28			73
885	64·33	35·67	724	27·5			72·5
886	64	36	719	27	28	26·53	72
887	63·67	36·33	714	26			71·5
888	63·33	36·67	709	25			71
889	63	37	704	24·5	27·5	26·07	70·65
890	62·5	37·5	699	24			70·3
891	62	38	694	23			69·8
892	61·5	38·5	689	22	27	25·61	69·3
893	61	39	644·5	21			69
894	60·67	39·33	680	20			68·7
895	60·33	39·67	675·5	19·5			68·35
895·5	60·16	39·84	673·25	19·25	26·5	25·15	68·17
896	60	40	671	19		25	68
897	59·5	40·5	666·5	18			67·65
898	59	41	662	17	26	24·69	67·3
899	58·5	41·5	655·5	16			67
900	58	42	649	15			66·7
900·5	57·75	42·25	647	14·75	25·5	24·23	66·52
901	57·5	42·5	645	14·5			66·35
901·5	57·25	42·75	643	14·25		24	66·17
902	57	43	641	14			66

HYDROMETRICAL EQUIVALENTS.

Sp. Gr. at 60° Fahr.	100 parts contain of Alcohol Sp. Gr. 796. By Weight.	Water. By Weight.	1000 pts. contain of Standard Alc. Sp. Gr. 825.	Sikes.	Baumé.	Cartier.	Per cent. of Alcohol, Sp. Gr. 796 by volume. Gay Lussac.
903	56·5	43·5	636	13 O.P.	25	23·77	65·5
904	56	44	631	12			65
905	55·5	44·5	626	11·5			64·5
906	55	45	621	11	24·5	23·31	64
907	54·5	45·5	616·5	10·5			63·65
908	54	46	612	10		23	63·3
909	53·5	46·5	607	9	24	22·85	62·65
910	53	47	602	8			62·3
911	52·5	47·5	595·5	7·5			61·9
912	52	48	591	7	23·5	22·39	61·5
913	51·67	48·33	586	6			61
914	51·33	48·67	581	5			60·5
915	51	49	576	4	23	21·94	60
916	50·5	49·5	571	3			59·6
917	50	50	560·5	2			59·3
918	49·67	50·33	562	1	22·5	21·48	59
919	49·33	50·67	554	·5			58·5
920	49	51	550	Proof			58
921	48·5	51·5	545	1 U.P.	22	21·02	57·5
922	48	52	540	2			57
923	47·5	52·5	535·5	3	21·5	20·56	56·5
924	47	53	531	4			56
925	46·5	53·5	526	5			55·5
926	46	54	521	6	21	20·10	55
927			515·5	6·5			
928	45	55	510	7			54
929	44·5	55·5	505	8			53·5
929·5	44·25	55·75	502·5	8·5	20·5	19·64	53·25
930	44	56	500	9			53
931	43·67	56·33	495·5	10			52·5
932	43·33	56·67	489	11			52
933	43	57	484	12	20	19·18	51·5
934	42·5	57·5	479	13		19	51
935	42	58	472·5	14			50·5
936	41·5	58·5	468	15	19·5	18·72	50
937	41	59	462	16			49·5
938	40·5	59·5	456	17			49
939	40	60	450	18	19	18·26	48·5
940	39·5	60·5	444	19			48
940·5	39·25	60·75	441	19·5		18	47·63

HYDROMETRICAL EQUIVALENTS.

Sp. Gr. at 60° Fahr.	100 parts contain of Alcohol Sp. Gr. 796. By Weight.	Water. By Weight.	1000 pts. contain of Standard Alc. Sp. Gr. 825.	Sikes.	Baumé.	Cartier.	Per cent. of Alcohol, Sp. Gr. 796 by volume. Gay Lussac.
941	39	61	438	20 U.P.			47·25
942	38·5	61·5	432	21	18·5	17·80	46·5
943	38	62	426·5	22			45
944	37·5	62·5	421	23			45·5
945	37	63	416	23·5	18	17·35	44·75
946	36·5	63·5	411	24			44
947	36	64	399	25		17	43·5
948	35·5	64·5	397	26	17·5	16·89	43
949	35	65	389·5	27			42·25
950	34·5	65·5	382	28			41·5
951	34	66	376	29·5	17	16·43	40
952	33·5	66·5	370	31			40·5
953	33	67	364	32·5			39·75
954	32·5	67·5	358	34			39
955	32	68	352	35	16·5	16·3	38·5
956	31·5	68·5	346	36		16	38
957	31	69	339·5	37·5			37·25
958	30	70	333	39			36·5
959	29·5	70·5	324	40·5	16	15·51	35·75
960	29	71	315	42			35
961	28·5	71 5	307·5	43·5			34·5
962	28	72	300	45	15·5	15	34
963	27	73	292·5	46·5			33
964	26·5	73·5	285	48			32
965	26	74	277·5	49·5	15	14·59	31
966	25·5	74·5	270	51			30
967	25	75	261·5	52·5			29
968	24	76	253	54			28
968·5	23·75	76·25			14·5	14·13	27·5
969	23·5	76·5	244·5	55·5			27
970	23	77	236	57			26
971	22·5	77·5	227	58·5			25
972	22	78	218	60	14	13·67	24
973	21	79	209	62			23
974	20	80	200	64			22
975	19	81	195	66	13·5	13·21	21
976	18·5	81·5	190·5	68			20
977	18	82	183·5	70			19
978	17	83	175	72	13	12·76	18
979	16	84	163	73·5			17

HYDROMETRICAL EQUIVALENTS.

Sp. Gr. at 60° Fahr.	100 parts contain of Alcohol Sp. Gr. 796. By Weight.	Water.	1000 pts. contain of Standard Alc. Sp. Gr. 825.	Sikes.	Baumé.	Cartier.	Per cent. of Alcohol Sp. Gr. 796 by volume. Gay Lussac.
980	15·5	84·5	150	75 U.P.			16
981	15	85	143	76			15
982	14	86	135	77	12·5	12·30	14
983	13·5	86·5	128	78·5			13
984	13	87	120	80			12
985	12·5	87·5	112	81			11·25
986	12	88	105	82	12	11.84	10·5
987	11	89	98	83·5			9·75
988	10	90	90	85			9
989	9	91	82	87	11·5	11·38	8
990	8	92	75	89			7
991	7	93	67·5	90·5			6·5
992	6	94	60	92			6
993	5·5	94·5	52·5	93·5	11	10·92	5
994	5	95	45	95			4
995	4	96	37·5	95·5			3·5
996	3·5	96·5	30	96	10·5	10·46	3
997	3	97	22·5	97			2
998	2	98	15	98			1
999	1	99	7·5	99			·5
1000	0	100	0	100	10	10	0

BAUMÉ'S HYDROMETER.

RELATION BETWEEN SPECIFIC GRAVITIES, AND DEGREES OF BAUMÉ'S HYDROMETER FOR LIQUIDS HEAVIER THAN WATER.

Sp. Gr.	Baumé.	Sp. Gr.	Baumé.	Sp. Gr.	Baumé.	Sp. Gr.	Baumé.	Sp. Gr.	Baumé.
1·000	= 0	1·067	= 9	1·143	= 18	1·231	= 27	1·334	= 36
1·007	1	1·075	10	1·152	19	1·242	28	1·346	37
1·014	2	1·083	11	1·161	20	1·252	29	1·359	38
1·022	3	1·091	12	1·171	21	1·264	30	1·372	39
1·029	4	1·100	13	1·180	22	1·275	31	1·384	40
1·036	5	1·108	14	1·190	23	1·286	32	1·398	41
1·044	6	1·116	15	1·199	24	1·298	33	1·412	42
1·052	7	1·125	16	1·210	25	1·309	34	1·426	43
1·060	8	1·134	17	1·221	26	1·321	35	1·440	44

BAUMÉ'S HYDROMETER.

Sp. Gr.	Baumé.	Sp. Gr.	Baumé.	Sp. Gr.	Baumé.	Sp. Gr.	Baumé.	Sp. Gr.	Baumé.
1·454	= 45	1·566	= 52	1·676	= 58	1·801	= 64	1·946	= 70
1·470	46	1·583	53	1·695	59	1·823	65	1·974	71
1·485	47	1·601	54	1·714	60	1·847	66	2·002	72
1·501	48	1·618	55	1·736	61	1·872	67	2·031	73
1·526	49	1·637	56	1·758	62	1·897	68	2·059	74
1·532	50	1·656	57	1·779	63	1·921	69	2·087	75
1·549	51								

SULPHURIC ACID.

QUANTITIES OF ANHYDROUS AND OF LIQUID SULPHURIC ACID CONTAINED IN MIXTURES OF OIL OF VITRIOL AND WATER AT DIFFERENT DENSITIES. (URE.)

Specific Gravity.	Liq. Acid. Sp. Gr. 1·8485 in 100.	Dry Acid in 100.	Specific Gravity.	Liq. Acid in 100.	Dry Acid in 100.
1·8485	100	81·54	1·6630	76	61·97
1·8475	99	80·72	1·6520	75	61·15
1·8460	98	79·90	1·6415	74	60·34
1·8439	97	79·09	1·6321	73	59·52
1·8410	96	78·28	1·6204	72	58·71
1·8376	95	77·46	1·6090	71	57·89
1·8336	94	76·65	1·5975	70	57·08
1·8290	93	75·83	1·5868	69	56·26
1·8233	92	75·02	1·5760	68	55·45
1·8179	91	74·20	1·5648	67	54·63
1·8115	90	73·39	1·5503	66	53·82
1·8043	89	72·57	1·5390	65	53·00
1·7962	88	71·75	1·5280	64	52·18
1·7870	87	70·94	1·5170	63	51·37
1·7774	86	70·12	1·5066	62	50·55
1·7673	85	69·31	1·4960	61	49·74
1·7570	84	68·49	1·4860	60	48·92
1·7465	83	67·68	1·4760	59	48·11
1·7360	82	66·86	1·4660	58	47·29
1·7245	81	66·05	1·4560	57	46·48
1·7100	80	65·23	1·4460	56	45·66
1·6993	79	64·42	1·4360	55	44·85
1·6870	78	63·60	1·4265	54	44·03
1·6750	77	62·78	1·4170	53	43·22

Specific Gravity.	Liq. Acid in 100.	Dry Acid in 100.	Specific Gravity.	Liq. Acid in 100.	Dry Acid in 100.
1·4073	52	42·40	1·1876	26	21·20
1·3977	51	41·58	1·1792	25	20·38
1·3884	50	40·77	1·1706	24	19·57
1·3788	49	39·95	1·1626	23	18·75
1·3697	48	39·14	1·1549	22	17·94
1·3612	47	38·32	1·1480	21	17·12
1·3530	46	37·51	1·1410	20	16·31
1·3440	45	36·69	1·1330	19	15·49
1·3345	44	35·88	1·1246	18	14·68
1·3255	43	35·06	1·1165	17	13·86
1·3165	42	34·25	1·1090	16	13·05
1·3080	41	33·43	1·1019	15	12·23
1·2999	40	32·61	1·0953	14	11·41
1·2913	39	31·80	1·0887	13	10·60
1·2826	38	30·98	1·0809	12	9·78
1·2740	37	30·17	1·0743	11	8·97
1·2654	36	29·35	1·0682	10	8·15
1·2572	35	28·54	1·0614	9	7·34
1·2490	34	27·72	1·0544	8	6·52
1·2409	33	26·91	1·0477	7	5·71
1·2334	32	26·09	1·0405	6	4·89
1·2260	31	25·28	1·0336	5	4·08
1·2184	30	24·46	1·0268	4	3·26
1·2108	29	23·65	1·0206	3	2·446
1·2032	28	22·83	1·0140	2	1·63
1·1956	27	22·01	1·0074	1	0·8154

NITRIC ACID.

QUANTITIES OF ANHYDROUS AND OF LIQUID NITRIC ACID CONTAINED IN MIXTURES OF NITRIC ACID AND WATER AT DIFFERENT DENSITIES. (URE.)

Specific Gravity.	Liq. Acid Sp. Gr. 1·5 in 100.	Dry Acid in 100.	Specific Gravity.	Liq. Acid in 100.	Dry Acid in 100.
1·5000	100	79·700	1·4820	93	74·121
1·4980	99	78·903	1·4790	92	73·324
1·4960	98	78·106	1·4760	91	72·527
1·4940	97	77·309	1·4730	90	71·730
1·4910	96	76·512	1·4700	89	70·933
1·4880	95	75·715	1·4670	88	70·136
1·4850	94	74·918	1·4640	87	69·339

Specific Gravity.	Liq. Acid Sp. Gr. 1·5 in 100.	Dry Acid in 100.	Specific Gravity.	Liq. Acid in 100.	Dry Acid in 100.
1·4600	86	68·542	1·2523	43	34·271
1·4570	85	67·745	1·2462	42	33·474
1·4530	84	66·948	1·2402	41	32·677
1·4500	83	66·155	1·2341	40	31·880
1·4460	82	65·354	1·2277	39	31·083
1·4424	81	64·557	1·2212	38	30·286
1·4385	80	63·760	1·2148	37	29·489
1·4346	79	62·963	1·2084	36	28·692
1·4306	78	62·166	1·2019	35	27·895
1·4269	77	61·369	1·1958	34	27·098
1·4228	76	60·572	1·1895	33	26·301
1·4189	75	59·775	1·1833	32	25·504
1·4147	74	58·978	1·1770	31	24·707
1·4107	73	58·181	1·1709	30	23·900
1·4065	72	57·384	1·1648	29	23·113
1·4023	71	56·587	1·1587	28	22·316
1·3978	70	55·790	1·1426	27	21·519
1·3945	69	54·993	1·1465	26	20·722
1·3882	68	54·196	1·1403	25	19·925
1·3833	67	53·399	1·1345	24	19·128
1·3783	66	52·602	1·1286	23	18·331
1·3732	65	51·805	1·1227	22	17·534
1·3681	64	51·068	1·1168	21	16·737
1·3630	63	50·211	1·1109	20	15·940
1·3579	62	49·414	1·1051	19	15·143
1·3529	61	48·617	1·0993	18	14·346
1·3477	60	47·820	1·0935	17	13·549
1·3427	59	47·023	1·0878	16	12·752
1·3376	58	46·226	1·0821	15	11·955
1·3323	57	45·429	1·0764	14	11·158
1·3270	56	44·632	1·0708	13	10·361
1·3216	55	43·835	1·0651	12	9·564
1·3163	54	43·038	1·0595	11	8·767
1·3110	53	42·241	1·0540	10	7·970
1·3056	52	41·444	1·0485	9	7·173
1·3001	51	40·647	1·0430	8	6·376
1·2947	50	39·850	1·0375	7	5·579
1·2887	49	39·053	1·0320	6	4·782
1·2826	48	38·256	1·0267	5	3·985
1·2765	47	37·459	1·0212	4	3·188
1·2705	46	36·662	1·0159	3	2·391
1·2644	45	35·865	1·0106	2	1·594
1·2583	44	35·068	1·0053	1	0·797

HYDROCHLORIC ACID.

VALUE AND ATOMIC COMPOSITION OF HYDROCHLORIC ACID AT DIFFERENT DENSITIES.

DAVY. (Temp. 40°. Bar. 30.)		THOMSON.		
Specific Gravity.	100 grains contain of hydroc. acid gas.	Specific Gravity.	Real Acid in 100 of liquid.	Atoms of water to 1 of acid.
1·21	42·43	1·203	40·66	6
1·20	40·80	1·179	37·00	7
1·19	38·38	1·162	33·95	8
1·18	36·36	1·149	31·35	9
1·17	34·34	1·139	29·13	10
1·16	32·32	1·128	27·21	11
1·15	30·30	1·119	25·52	12
1·14	28·28	1·112	24·03	13
1·13	26·26	1·106	22·70	14
1·12	24·24	1·100	21·51	15
1·11	22·30	1·096	20·44	16
1·10	20·20	1·090	19·47	17
1·09	18·18	1·086	18·59	18
1·08	16·16	1·082	17·79	19
1·07	14·14	1·087	17·05	20
1·06	12·12			
1·05	10·10			
1·04	8·08			
1·03	6·06			
1·02	4·04			
1·01	2·02			

ACETIC ACID.

SPECIFIC GRAVITY OF ACETIC ACID AT DIFFERENT DEGREES OF DILUTION. (THOMSON.)

Atoms of Acid.		Atoms of Water.		Specific Gravity at 60°.
1	+	1	=	1·06296
1	+	2	=	1·07060
1	+	3	=	1·07084
1	+	4	=	1·07132
1	+	5	=	1·06820
1	+	6	=	1·06708
1	+	7	=	1·06349
1	+	8	=	1·05974
1	+	9	=	1·05794
1	+	10	=	1·05439

SOLUTION OF AMMONIA.

QUANTITIES OF AMMONIA IN SOLUTIONS OF DIFFERENT SPECIFIC GRAVITIES. (DAVY).

100 parts. Specific Gravity		of Ammonia.
8750	contain	32·50
8875	,,	29·25
9000	,,	26·00
9054	,,	25·37
9166	,,	22·07
9255	,,	19·54
9326	,,	17·52
9385	,,	15·88
9435	,,	14·53
9476	,,	13·46
9513	,,	12·40
9545	,,	11·56
9573	,,	10·82
9597	,,	10·17
9619	,,	9·60
9612	,,	9·50

STRENGTHS OF SOLUTIONS OF AMMONIA OF DIFFERENT SPECIFIC GRAVITIES, AND THEIR RESPECTIVE BOILING-POINTS. (DALTON.)

Specific Gravity.	Grs. of Ammonia in 100 grs. of liquid.	Boiling-Point.	Vol. of gas in one vol. of liquid.
850	35·3	26	494
860	32·6	38	456
870	29·9	50	419
880	27·3	62	382
890	24·7	74	346
900	22·2	86	311
910	19·8	98	277
920	17·4	100	244
930	15·1	122	211
940	12·8	134	180
950	10·5	146	147
960	8·3	158	116
970	6·2	173	87
980	4·1	187	57
990	2·0	196	28

SOLUTION OF POTASH.

QUANTITY OF ANHYDROUS POTASSA CONTAINED IN SOLUTIONS OF DIFFERENT SPECIFIC GRAVITIES. (DALTON.)

Specific Gravity	Potassa per Cent.	Boiling-Point.
1·68	51·2	329°
1·60	46·7	290
1·52	42·9	276
1·47	39·6	265
1·44	36·8	255
1·42	34·4	246
1·39	32·4	240
1·36	29·4	234
1·33	26·3	229
1·28	23·4	224
1·23	19·5	220
1·19	16·2	218
1·15	13·0	215
1·11	9·5	214
1·06	4·7	213

SOLUTION OF SODA.

QUANTITY OF ANHYDROUS SODA CONTAINED IN SOLUTIONS OF DIFFERENT SPECIFIC GRAVITIES. (DALTON.)

Specific Gravity.	Dry Soda per Cent.	Boiling-Point.
1·85	63·6	600°
1·72	53·8	400
1·63	46·6	300
1·56	41·2	280
1·50	36·8	265
1·47	34·0	255
1·44	31·0	248
1·40	29·0	242
1·36	26·0	235
1·32	23·0	228
1·29	19·0	224
1·23	16·0	230
1·18	13·0	217
1·12	9·0	214
1·06	4·7	213

SPECIFIC GRAVITIES OF SOME OF THE SUBSTANCES ORDERED IN THE PHARMACOPŒIAS.

The London Pharmacopœia directs the Specific Gravity to be taken at a temperature of 62° Fahr., the Edinburgh at 60° Fahr.

		Sp. Gr.
Acetum	London	1·019
Acetum Destillatum	London	1·0065
———	Edin.	1·005
Acidum Aceticum	London	1·048
———	Edin.	1·063 to 1·068
——— Glaciale.	Dublin	1·065
——— e ligno venale.	Dublin	1·044
——— forte	Dublin	1·066
——— dilutum.	London	1·008
———.	Dublin	1·006
——— Hydrochloricum	London	1·16
———	Edin.	1·17
——— dilutum.	Edin.	1·050
——— Hydrocyanicum dilutum	Dublin	0·997
——— Muriaticum purum.	Dublin	1·176
——— dilutum	Dublin	1·045
——— Nitricum	London	1·420
———	Edin.	1·500
——— purum	Dublin	1·500
——— dilutum	London	1·082
———	Edin.	1·077
———	Dublin	1·092
——— Phosphoricum dilutum	London	1·064
——— Sulphuricum	London	1·843
———	Edin.	1·845
——— purum	Dublin	1·846
——— dilutum	London	1·103
———	Edin.	1·090
———	Dublin	1·084
——— Aromaticum	Dublin	0·974
Æther	London	0·750
——— Sulphuricus	Edin.	0·735
Alcohol	Edin.	0·796
———	Dublin	0·795
Ammoniæ Hydrosulphuretum	Dublin	0·999
Aqua Destillata.	L. E. D.	1·000
—— Ammoniæ.	Edin.	0·960
——— Acetatis	Edin.	1·011
—— Potassæ	Edin.	1·072
Bismuthum	London	9·8

		Sp. Gr.
Chloroformyl	London	1·48
Chloroformum	Dublin	1·496
Creasotum	London	1·046
———	Dublin	1·066
Glycerina	Dublin	1·260
Hydrargyrum	London	13·5
Liquor Ammoniæ	London	0·960
———	Dublin	0·950
——— Fortior	London	0·882
———	Dublin	0·900
——— Acetatis	London	1·022
———	Dublin	1·012
——— Antimonii Terchloridi	Dublin	1·470
——— Arsenicalis	Dublin	1·013
——— Barii Chloridi	Dublin	1·088
——— Calcii Chloridi	Dublin	1·225
——— Calcis Chlorinatæ	Dublin	1·035
——— Ferri Pernitras	Dublin	1·107
——— Plumbi Diacetatis	London	1·260
——— Subacetatis	Dublin	1·066
——— Potassæ	London	1·063
——— Causticæ	Dublin	1·068
——— Carbonatis	Dublin	1·310
——— Sodæ	London	1·061
——— Causticæ	Dublin	1·056
——— Carbonatis	Dublin	1·026
——— Chlorinatæ	Dublin	1·034
——— Zinci Chloridi	Dublin	1·593
Oleum Æthereum	London	1·05
Spiritus Ætheris Nitrici	London	0·834
———	Edin.	0·847
——— Sulphurici	Edin.	0·809
——— Ammoniæ Aromaticus	London	0·918
———	Dublin	0·852
——— Fœtidus	London	0·861
———	Dublin	0·849
——— Fortior	Dublin	0·818
——— Pyroxilicus	Dublin	0·846
——— Rectificatus	London	0·838
———	Edin.	0·838
———	Dublin	0·840
——— Tenuior	London	0·920
———	Edin.	0·912
———	Dublin	0·920
Syrupus Simplex	Dublin	1·330
Tinctura Ferri Acetatis	Dublin	0·891
——— Sesquichloridi	London	0·992
———	Dublin	1·237
Zincum	London	6·860

THERMOMETRICAL EQUIVALENTS.

RELATION BETWEEN DIFFERENT THERMOMETRICAL SCALES.

The thermometer always used in this country is that of Fahrenheit; it is also used in parts of Germany.

In this instrument the range between the freezing and boiling points of water is divided into 180°, and as the greatest possible degree of cold was supposed to be that produced by mixing snow and salt together, it was made the zero. Hence the freezing-point became 32°, and the boiling-point 212°.

The Centigrade thermometer places the zero at the freezing-point of water, and divides the range between the freezing and boiling points into 100°. This scale has long been used in Sweden, under the title of Celsius's thermometer, and is generally adopted on the Continent.

Reaumur's thermometer, which was formerly used in France, divides the space between the freezing and boiling-points of water into 80°, and places the zero at the freezing point. It is now little employed.

Le Lisle's thermometer is used in Russia. The graduation begins at the boiling-point, and increases towards the freezing-point. The boiling-point is marked 0°, and the freezing-point 150°.

To reduce Centigrade degrees to those of Fahrenheit.

RULE.—Multiply by 9, divide by 5, and add 32.

Cent. Fahr.

Thus, $40 \times 9 \div 5 + 32 = 104$.

To reduce Fahrenheit's degrees to those of Centigrade.

RULE.—Subtract 32, multiply by 5, and divide by 9.

Fahr. Cent.

Thus, $104 - 32 \times 5 \div 9 = 40$.

To reduce Reaumur's degrees to those of Fahrenheit.

RULE.—Multiply by 9, divide by 4, and add 32.

Reaumur. Fahr.

Thus, $32 \times 9 \div 4 + 32 = 104$.

To reduce Fahrenheit's degrees to those of Reaumur.

RULE.—Subtract 32, multiply by 4, and divide by 9.

Fahr. Reaum.

Thus, $104 - 32 \times 4 \div 9 = 32$.

To reduce Reaumur's degrees to those of Centigrade.

RULE.—Multiply by 5, and divide by 4.

Reaum. Cent.

Thus, $32 \times 5 \div 4 = 40$.

To reduce Centigrade degrees to those of Reaumur.

RULE.—Multiply by 4, and divide by 5.

Cent. Reaum.

Thus, $40 \times 4 \div 5 = 32$.

The following table of Thermometrical Equivalents has been calculated according to these rules.

Fahrenheit.	Reaumur.	Centigrade, or Celsius's.	Fahrenheit.	Reaumur.	Centigrade, or Celsius's.
2570	1128	1410	761	324	405
2480	1088	1360	752	320	400
2390	1048	1310	743	316	395
2300	1008	1260	734	312	390
2210	968	1210	725	308	385
2120	928	1160	716	304	380
2030	888	1110	707	300	375
1940	848	1060	698	296	370
1850	808	1010	689	292	365
1760	768	960	680	288	360
1670	728	910	671	284	355
1580	688	860	662	280	350
1490	648	810	653	276	345
1400	608	760	644	272	340
1310	568	710	635	268	335
1220	528	660	626	264	330
1130	488	610	617	260	325
1040	448	560	608	256	320
1004	432	540	600	252·44	315·55
995	428	535	599	252	315
986	424	530	598	251·55	314·44
977	420	525	597·2	251·2	314
968	416	520	597	251·11	313·88
959	412	515	596·75	251	313·75
950	408	510	596	250·36	313·33
941	404	505	595·4	250·4	313
932	400	500	595	250·22	312·77
923	396	495	594·5	250	312·5
914	392	490	594	249·77	312·22
905	388	485	593·6	249·6	312
896	384	480	593	249·33	311·66
887	380	475	592·25	249	311·25
878	376	470	592	248·88	311·11
869	372	465	591·8	248·8	311
860	368	460	591	248·44	310·55
851	364	455	590	248	310
842	360	450	589	247·55	309·44
833	356	445	588·2	247·2	309
824	352	440	588	247·11	308·88
815	348	435	587·75	247	308·75
806	344	430	587	246·66	308·33
797	340	425	586·4	246·4	308
788	336	420	586	246·22	307·77
779	332	415	585·5	246	307·5
770	328	410	585	245·77	307·22

Fahrenheit.	Reaumur.	Centigrade, or Celsius's.	Fahrenheit.	Reaumur.	Centigrade, or Celsius's.
584·6	245·6	307	559	234·22	292·77
584	245·33	306·66	558·5	234	292·5
583·25	245	306·25	558	233·77	292·22
583	244·88	306·11	557·6	233·6	292
582·8	244·8	306	557	233·33	291·66
582	244·44	305·55	556·25	233	291·25
581	244	305	556	232·88	291·11
580	243·55	304·44	555·8	232·8	291
579·2	243·2	304	555	232·44	290·55
579	243·11	303·88	554	232	290
578·75	243	303·75	553	231·55	289·44
578	242·66	303·33	552·2	231·2	289
577·4	242·4	303	552	231·11	288·88
577	242·22	302·77	551·75	231	288·75
576·5	242	302·5	551	230·66	288·33
576	241·77	302·22	550·4	230·4	288
575·6	241·6	302	550	230·22	287·77
575	241·33	301·66	549·5	230	287·5
574·25	241	301·25	549	229·77	287·22
574	240·88	301·11	548·6	229·6	287
573·8	240·8	301	548	229·33	286·66
573	240·44	300·55	547·25	229	286·25
572	240	300	547	228·88	286·11
571	239·55	299·44	546·8	228·8	286
570·2	239·2	299	546	228·44	285·55
570	239·11	298·88	545	228	285
569·75	239	298·75	544	227·55	284·44
569	238·66	298·33	543·2	227·2	284
568·4	238·4	298	543	227·11	283·88
568	238·22	297·77	542·75	227	283·75
567·5	238	297·5	542	226·66	283·33
567	237·77	297·22	541·4	226·4	283
566·6	237·6	297	541	226·22	282·77
566	237·33	296·66	540·5	226	282·5
565·25	237	296·25	540	225·77	282·22
565	236·88	296·11	539·6	225·6	282
564·8	236·8	296	539	225·33	281·66
564	236·44	295·55	538·25	225	281·25
563	236	295	538	224·88	281·11
562	235·55	294·44	537·8	224·8	281
561·2	235·2	294	537	224·44	280·55
561	235·11	293·88	536	224	280
560·75	235	293·75	535	223·55	279·44
560	234·66	293·33	534·2	223·2	279
559·4	234·4	293	534	223·11	278·88

Fahrenheit.	Reaumur.	Centigrade, or Celsius's.	Fahrenheit.	Reaumur.	Centigrade, or Celsius's.
533·75	223	278·75	508	211·5	264·44
533	222·66	278·33	507·2	211·2	264
532·4	222·4	278	507	211·11	263·88
532	222·22	277·77	506·75	211	263·73
531·5	222	277·5	506	210·66	263·33
531	221·77	277·22	505·4	210·4	263
530·6	221·6	277	505	210·22	262·77
530	221·33	276·66	504·5	210	262·5
529·25	221	276·25	504	209·77	262·22
529	220·88	276·11	503·6	209·6	262
528·8	220·8	276	503	209·33	261·66
528	220·44	275·55	502·25	209	261·25
527	220	275	502	208·88	261·11
526	219·55	274·44	501·8	208·8	261
525·2	219·2	274	501	208·44	260·55
525	219·11	273·88	500	208	260
524·75	219	273·75	499	207·55	259·44
524	218·66	273·33	498·2	207·2	259
523·4	218·4	273	498	207·11	258·88
523	218·22	272·77	497·75	207	258·75
522·5	218	272·5	497	206·66	258·33
522	217·77	272·22	496·4	206·4	258
521·6	217·6	272	496	206·22	257·77
521	217·33	271·66	495·5	206	257·5
520·25	217	271·25	495	205·77	257·22
520	216·88	271·11	494·6	205·66	257
519·8	216·8	271	494	205·33	256·66
519	216·44	270·55	493·25	205	256·25
518	216	270	493	204·88	256·11
517	215·55	269·44	492·8	204·8	256
516·2	215·2	269	492	204·44	255·55
516	215·11	268·88	491	204	255
515·75	215	268·75	490	203·55	254·44
515	214·66	268·33	489·2	203·2	254
514·4	214·4	268	489	203·11	253·88
514	214·22	267·77	488·75	203	253·75
513·5	214	267·5	488	202·66	253·33
513	213·77	267·22	487·4	202·4	253
512·6	213·6	267	487	202·22	252·77
512	213·33	266·66	486·5	202	252·5
511·25	213	266·25	486	201·77	252·22
511	212·88	266·11	485·6	201·6	252
510·8	212·8	266	485	201·33	251·66
510	212·44	265·55	484·25	201	251·25
509	212	265	484	200·88	251·11

Fahrenheit.	Reaumur.	Centigrade, or Celsius's.	Fahrenheit.	Reaumur.	Centigrade, or Celsius's.
483·8	200·8	251	458	189·33	236·66
483	200·44	250·55	457·25	189	236·25
482	200	250	457	188·88	236·11
481	199·55	249·44	456·8	188·8	236
480·2	199·2	249	456	188·44	235·55
480	199·11	248·88	455	188	235
479·75	199	248·75	454	187·55	234·44
479	198·66	248·33	453·2	187·2	234
478·4	198·4	248	453	187·11	233·88
478	198·22	247·77	452·75	187	233·77
477·5	198	247·5	452	186·66	233·33
477	197·77	247·22	451·4	186·4	233
476·6	197·6	247	451	186·22	232·77
476	197·33	246·66	450·5	186	232·5
475·25	197	246·25	450	185·77	232·22
475	196·88	246·11	449·6	185·6	232
474·8	196·8	246	449	185·33	231·66
474	196·44	245·55	448·25	185	231·25
473	196	245	448	184·88	231·11
472	195·55	244·44	447·8	184·8	231
471·2	195·2	244	447	184·44	230·55
471	195·11	243·88	446	184	230
470·75	195	243·75	445	183·55	229·44
470	194·66	243·33	444·2	183·2	229
469·4	194·4	243	444	183·11	228·88
469	194·22	242·77	443·75	183	228·75
468·5	194	242·5	443	182·66	228·33
468	193·77	242·22	442·4	182·4	228
467·6	193·6	242	442	182·22	227·77
467	193·33	241·66	441·5	182	227·5
466·25	193	241·25	441	181·77	227·22
466	192·88	241·11	440·6	181·6	227
465·8	192·8	241	440	181·33	226·66
465	192·44	240·55	439·25	181	226·25
464	192	240	439	180·88	226·11
463	191·55	239·44	438·8	180·8	226
462·2	191·2	239	438	180·44	225·55
462	191·11	238·88	437	180	225
461·75	191	238·75	436	179·55	224·44
461	190·66	238·33	435·2	179·2	224
460·4	190·4	238	435	179·11	223·88
460	190·22	237·77	434·75	179	223·75
459·5	190	237·5	434	178·66	223·33
459	189·77	237·22	433·4	178·4	223
458·6	189·6	237	433	178·22	222·77

Fahrenheit.	Reaumur.	Centigrade, or Celsius's.	Fahrenheit.	Reaumur.	Centigrade, or Celsius's.
432·5	178	222·5	407	166·66	208·33
432	177·77	222·22	406·4	166·4	208
431·6	177·6	222	406	166·22	207·77
431	177·33	221·66	405·5	166	207·5
430·25	177	221·25	405	165·77	207·22
430	176·88	221·11	404·6	165·6	207
429·8	176·8	221	404	165·33	206·66
429	176·44	220·55	403·25	165	206·25
428	176	220	403	164·88	206·11
427	175·55	219·44	402·8	164·8	206
426·2	175·2	219	402	164·44	205·55
426	175·11	218·88	401	164	205
425·75	175	218·75	400	163·55	204·44
425	174·66	218·33	399·2	163·2	204
424·4	174·4	218	399	163·11	203·88
424	174·22	217·77	398·75	163	203·75
423·5	174	217·5	398	162·66	203·33
423	173·77	217·22	397·4	162·4	203
422·6	173·6	217	397	162·22	202·77
422	173·33	216·66	396·5	162	202·5
421·25	173	216·25	396	161·77	202·22
421	172·88	216·11	395·6	161·6	202
420·8	172·8	216	395	161·33	201·66
420	172·44	215·55	394·25	161	201·25
419	172	215	394	160·88	201·11
418	171·55	214·44	393·8	160·8	201
417·2	171·2	214	393	160·44	200·55
417	171·11	213·88	392	160	200
416·75	171	213·75	391	159·55	199·44
416	170·6	213·33	390·2	159·2	199
415·4	170·4	213	390	159·11	198·88
415	170·22	212·77	389·75	159	198·75
414·5	170	212·5	389	158·66	198·33
414	169·77	212·22	388·4	158·4	198
413·6	169·6	212	388	158·22	197·77
413	169·33	211·66	387·5	158	197·5
412·25	169	211·25	387	157·77	197·22
412	168·88	211·11	386·6	157·6	197
411·8	168·8	211	386	157·33	196·66
411	168·44	210·5	385·25	157	196·25
410	168	210	385	156·88	196·11
409	167·55	209·44	384·8	156·8	196
408·2	167·2	209	384	156·44	195·55
408	167·11	208·88	383	156	195
407·75	167	208·75	382	155·55	194·44

Fahrenheit.	Reaumur.	Centigrade, or Celsius's.	Fahrenheit.	Reaumur.	Centigrade. or Celsius's.
381·2	155·2	194	357	144·44	180·55
381	155·11	193·88	356	144	180
380·75	155	193·75	355	143·55	179·44
380	154·66	193·33	354·2	143·2	179
379·4	154·4	193	354	143·11	178·88
379	154·22	192·77	353·75	143	178·75
378·5	154	192·5	353	142·66	178·33
378	153·77	192·22	352·4	142·4	178
377·6	153·6	192	352	142·22	177·77
377	153·33	191·66	351·5	142	177·5
376·25	153	191·25	351	141·77	177·22
376	152·88	191·11	350·6	141·6	177
375·8	152·8	191	350	141·33	176·66
375	152·44	190·55	349·25	141	176·25
374	152	190	349	140·88	176·11
373	151·55	189·44	348·8	140·8	176
372·2	151·2	189	348	140·44	175·55
372	151·11	188·88	347	140	175
371·75	151	188·75	346	139·55	174·44
371	150·66	188·33	345·2	139·2	174
370·4	150·4	188	345	139·11	173·88
370	150·22	187·77	344·75	139	173·75
369·5	150	187·5	344	138·66	173·33
369	149·77	187·22	343·4	138·4	173
368·6	149·6	187	343	138·22	172·77
368	149·33	186·66	342·5	138	172·5
367·25	149	186·25	342	137·77	172·22
367	148·88	186·11	341·6	137·6	172
366·8	148·8	186	341	137·33	171·66
366	148·44	185·55	340·25	137	171·25
365	148	185	340	136·88	171·11
364	147·55	184·44	339·8	136·8	171
363·2	147·2	184	339	136·44	170·55
363	147·11	183·88	338	136	170
362·75	147	183·75	337	135·55	169.44
362	146·66	183·33	336·2	135·2	169
361·4	146·4	183	336	135·11	168·88
361	146·22	182·77	335·75	135	168·75
360 5	146	182·5	335	134·66	168·33
360	145·77	182·22	334·4	134·4	168
359·6	145·6	182	334	134·22	167·77
359	145·33	181·66	333·5	134	167·5
358·25	145	181·25	333	133·77	167·22
358	144·88	181·11	332·6	133·6	167
357·8	144·8	181	332	133·33	166·66

Fahrenheit.	Reaumur.	Centigrade, or Celsius's.	Fahrenheit.	Reaumur.	Centigrade, or Celsius's.
331·25	133	166·25	306	121·77	152·22
331	132·88	166·11	305·6	121·6	152
330·8	132·8	166	305	121·33	151·66
330	132·44	165·55	304·25	121	151·25
329	132	165	304	120·88	151·11
328	131·55	164·44	303·8	120·8	151
327·2	131·2	164	303	120·44	150·55
327	131·11	163·88	302	120	150
326·75	131	163·73	301	119·55	149·44
326	130·66	163·33	300·2	119·2	149
325·4	130·4	163	300	119·11	148·88
325	130·22	162·77	299·75	119	148·75
324·5	130	162·5	299	118·66	148·33
324	129·77	162·22	298·4	118·4	148
323·6	129·6	162	298	118 22	147·77
323	129·33	161·66	297·5	118	147·5
322·25	129	161·25	297	117·77	147·22
322	128·88	161·11	296·6	117·6	147
321·8	128·8	161	296	117·33	146·66
321	128·44	160·55	295·25	117	146·25
320	128	160	295	116·88	146·11
319	127·55	159·44	294·8	116·8	146
318·2	127·2	159	294	116·44	145·55
318	127·11	158·88	293	116	145
317·75	127	158·75	292	115·55	144·44
317	126·66	158·33	291·2	115·2	144
316·4	126·4	158	291	115·11	143·88
316	126·22	157·77	290·75	115	143·75
315·5	126	157·5	290	114·66	143·33
315	125·77	157·22	289·4	114·4	143
314·6	125·6	157	289	114·22	142·77
314	125·33	156·66	288·5	114	142·5
313·25	125	156·25	288	113·77	142·22
313	124·88	156·11	287·6	113·6	142
312·8	124·8	156	287	113·33	141·66
312	124·55	155·55	286·25	113	141·25
311	124	155	286	112·88	141·11
310	123·55	154·44	285·8	112·8	141
309·2	123·2	154	285	112·44	140·55
309	123·11	153·88	284	112	140
308·75	123	153·75	283	111·55	139·44
308	122·66	153·33	282·2	111·2	139
307·4	122·4	153	282	111·11	138·88
307	122·22	152·77	281·75	111	138·75
306·5	122	152·5	281	110·66	138·33

Fahrenheit.	Reaumur.	Centigrade, or Celsius's.	Fahrenheit.	Reaumur.	Centigrade, or Celsius's.
280·4	110·4	138	255	99.11	123·88
280	110·22	137·77	254·75	99	123·75
279·5	110	137·5	254	98·66	123·33
279	109·77	137·22	253·4	98·4	123
278·6	109·6	137	253	98·22	122·77
278	109·33	136·66	252·5	98	122·5
277·25	109	136·25	252	97·77	122·22
277	108·88	136·11	251·6	97·6	122
276·8	108·8	136	251	97·33	121·66
276	108·44	135·55	250·25	97	121·25
275	108	135	250	96·88	121·11
274	107·55	134·44	249·8	96·8	121
273·2	107·2	134	249	96·44	120·55
273	107·11	133·88	248	96	120
272·75	107	133·77	247	95·55	119·44
272	106·66	133·33	246·2	95·2	119
271·4	106·4	133	246	95·11	118·88
271	106·22	132·77	245·75	95	118·75
270·5	106	132·5	245	94·66	118·33
270	105·77	132·22	244·4	94·4	118
269·6	105·6	132	244	94·22	117·77
269	105·33	131·66	243·5	94	117·5
268·25	105	131·25	243	93·77	117·22
268	104·88	131·11	242·6	93·6	117
267·8	104·8	131	242	93·33	116·66
267	104·44	130·55	241·25	93	116·25
266	104	130	241	92·88	116·11
265	103·55	129·44	240·8	92·8	116
264·2	103·2	129	240	92·44	115·55
264	103·11	128·88	239	92	115
263·75	103	128·75	238	91·55	114·44
263	102·66	128·33	237·2	91·2	114
262·4	102·4	128	237	91·11	113·88
262	102·22	127·77	236·75	91	113·75
261·5	102	127·5	236	90·36	113·33
261	101·77	127·22	235·4	90·4	113
260·6	101·6	127	235	90·22	112·77
260	101·33	126·66	234·5	90	112·5
259·25	101	126·25	234	89·77	112·22
259	100·88	126·11	233·6	89·6	112
258·8	100·8	126	233	89·33	111·66
258	100·44	125·55	232·25	89	111·25
257	100	125	232	88·88	111·11
256	99·55	124·44	231·8	88·8	111
255·2	99·2	124	231	88·44	110·5

Fahrenheit.	Reaumur.	Centigrade, or Celsius's.	Fahrenheit.	Reaumur.	Centigrade, or Celsius's.
230	88	110	205	76·88	96·11
229	87·55	109·44	204·8	76·8	96
228·2	87·2	109	204	76·44	95·55
228	87·11	108·88	203	76	95
227·75	87	108·75	202	75·55	94·44
227	86·66	108·33	201·2	75·2	94
226·4	86·4	108	201	75·11	93·88
226	86·22	107·77	200·75	75	93·75
225·5	86	107·5	200	74·66	93·33
225	85·77	107·22	199·4	74·4	93
224·6	85·6	107	199	74·22	92·77
224	85·33	106·66	198·5	74	92·5
223·25	85	106·25	198	73·77	92·22
223	84·88	106·11	197·6	73·6	92
222·8	84·8	106	197	73·33	91·66
222	84·44	105·55	196·25	73	91·25
221	84	105	196	72·88	91·11
220	83·55	104·44	195·8	72·8	91
219·2	83·2	104	195	72·44	90·55
219	83·11	103·88	194	72	90
218·75	83	103·75	193	71·55	89·44
218	82·66	103·33	192·2	71·2	89
217·4	82·4	103	192	71·11	88·88
217	82·22	102·77	191·75	71	88·75
216·5	82	102·5	191	70·66	88·33
216	81·77	102·22	190·4	70·4	88
215·6	81·6	102	190	70·22	87·77
215	81·33	101·66	189·5	70	87·5
214·25	81	101·25	189	69·77	87·22
214	80·88	101·11	188·6	69·6	87
213·8	80·8	101	188	69·33	86·66
213	80·44	100·55	187·25	69	86·25
212	80	100	187	68·88	86·11
211	79·55	99·44	186·8	68·8	86
210·2	79·2	99	186	68·44	85·55
210	79·11	98·88	185	68	85
209·75	79	98·75	184	67·55	84·44
209	78·66	98·33	183·2	67·2	84
208·4	78·4	98·0	183	67·11	83·88
208	78·22	97·77	182·75	67	83·75
207·5	78	97·5	182	66·66	83·33
207	77·77	97·22	181·4	66·4	83
206·6	77·6	97	181	66·22	82·77
206	77·33	96·66	180·5	66	82·5
205·25	77	96·25	180	65·77	82·22

Fahrenheit.	Reaumur.	Centigrade. or Celsius's.	Fahrenheit.	Reaumur.	Centigrade or Celsius's.
179·6	65·6	82	154	54·22	67·77
179	65·33	81·66	153·5	54	67·5
178·25	65	81·25	153	53·77	67·22
178	64·88	81·11	152·6	53·6	67
177·8	64·8	81	152	53·33	66·66
177	64·44	80·55	151·25	53	66·25
176	64	80	151	52·88	66·11
175	63·55	79·44	150·8	52·8	66
174·2	63·2	79	150	52·44	65·55
174	63·11	78·88	149	52	65
173·75	63	78·75	148	51·55	64·44
173	62·66	78·33	147·2	51·2	64
172·4	62·4	78	147	51·11	63·88
172	62·22	77·77	146·75	51	63·75
171·5	62	77·5	146	50·66	63·33
171	61·77	77·22	145·4	50·4	63
170·6	61·6	77	145	50·22	62·77
170	61·33	76·66	144·5	50	62·5
169·25	61	76·25	144	49·77	62·22
169	60·88	76·11	143·6	49·6	62
168·8	60·8	76	143	49·33	61·66
168	60·44	75·55	142·25	49	61·25
167	60	75	142	48·88	61·11
166	59·55	74·44	141·8	48·8	61
165·2	59·2	74	141	48·44	60·55
165	59·11	73·88	140	48	60
164·75	59	73·75	139	47·55	59·44
164	58·66	73·33	138·2	47·2	59
163·4	58·4	73	138	47·11	58·88
163	58·22	72·77	137·75	47	58·75
162·5	58	72·5	137	46·66	58·33
162	57·77	72·22	136·4	46·4	58
161·6	57·6	72	136	46·22	57·77
161	57·33	71·66	135·5	46	57·5
160·25	57	71·25	135	45·77	57·22
160	56·88	71·11	134·6	45·6	57
159·8	56·8	71	134	45·33	56·66
159	56·44	70·55	133·25	45	56·25
158	56	70	133	44·88	56·11
157	55 55	69·44	132·8	44·8	56
156·2	55·2	69	132	44·55	55·55
156	55·11	68·88	131	44	55
155·75	55	68·75	130	43·55	54·44
155	54·66	68·33	129·2	43·2	54
154·4	54·4	68	129	43·11	53·88

Fahrenheit.	Reaumur.	Centigrade or Celsius's.	Fahrenheit.	Reaumur.	Centigrade, or Celsius's.
128·75	43	53·75	103	31·55	39·44
128	42·66	53·33	102·2	31·2	39
127·4	42·4	53	102	31·11	38·88
127	42·22	52·77	101·75	31	38·75
126·5	42	52·5	101	30·66	38·33
126	41·77	52·22	100·4	30·4	38
125·6	41·6	52	100	30·22	37·77
125	41·33	51·66	99·5	30	37·5
124·25	41	51·25	99	29·77	37·22
124	40·88	51·11	98·6	29·6	37
123·8	40·8	51	98	29·33	36·66
123	40·44	50·55	97·25	29	36·25
122	40	50	97	28·88	36·11
121	39·55	49·44	96·8	28·8	36
120·2	39·2	49	96	28·44	35·55
120	39·11	48·88	95	28	35
119·75	39	48·75	94	27·55	34·44
119	38·66	48·33	93·2	27·2	34
118·4	38·4	48	93	27·11	33·88
118	38·22	47·77	92·75	27	33·77
117·5	38	47·5	92	26·66	33 33
117	37·77	47·22	91·4	26·4	33
116·6	37·6	47	91	26·22	32·77
116	37·33	46·66	90·5	26	32·5
115·25	37	46·25	90	25·77	32·22
115	36·88	46·11	89·6	25·6	32
114·8	36·8	46	89	25·33	31·66
114	36·44	45·55	88·25	25	31·25
113	36	45	88	24·88	31·11
112	35·55	44·44	87·8	24·8	31
111·2	35·2	44	87	24·44	30·55
111	35·11	43·88	86	24	30
110·75	35	43·75	85	23·55	29·44
110	34·66	43·33	84·2	23·2	29
109·4	34·4	43	84	23·11	28·88
109	34·22	42·77	83·75	23	28·75
108·5	34	42·5	83	22·66	28·33
108	33·77	42·22	82·4	22·4	28
107·6	33·6	42	82	22·22	27·77
107	33·33	41·66	81·5	22	27·5
106·25	33	41·25	81	21·77	27·22
106	32·88	41·11	80·6	21·6	27
105·8	32·8	41	80	21·33	26·66
105	32·44	40·55	79·25	21	26·25
104	32	40	79	20·88	26·11

Fahrenheit.	Reaumur.	Centigrade. or Celsius's.	Fahrenheit.	Reaumur.	Centigrade, or Celsius's.
78·8	20·8	26	53	9·33	11·66
78	20·44	25·55	52·25	9	11·25
77	20	25	52	8·88	11·11
76	19·55	24·44	51·8	8·8	11
75·2	19·2	24	51	8·44	10·5
75	19·11	23·88	50	8	10
74·75	19	23·75	49	7·55	9·44
74	18·66	23·33	48·2	7·2	9
73·4	18·4	23	48	7·11	8·88
73	18·22	22·77	47·75	7	8·75
72·5	18	22·5	47	6·66	8·33
72	17·77	22·22	46·4	6·4	8
71·6	17·6	22	46	6·22	7·77
71	17·33	21·66	45·5	6	7·5
70·25	17	21·25	45	5·77	7·22
70	16·88	21·11	44·6	5·6	7
69·8	16·8	21	44	5·33	6·66
69	16·44	20·55	43·25	5	6·25
68	16	20	43	4·88	6·11
67	15·55	19·44	42·8	4·8	6
66·2	15·2	19	42	4·44	5·55
66	15·11	18·88	41	4	5
65·75	15	18·75	40	3·55	4·44
65	14·66	18·33	39·2	3·2	4
64·4	14·4	18	39	3·11	3·88
64	14·22	17·77	38·75	3	3·75
63·5	14	17·5	38	2·66	3·33
63	13·77	17·22	37·4	2·4	3
62·6	13·6	17	37	2·22	2·77
62	13·33	16·66	36·5	2	2·5
61·25	13	16·25	36	1·77	2·22
61	12·88	16·11	35·6	1·6	2
60·8	12·8	16	35	1·33	1·66
60	12·44	15·55	34·25	1	1·25
59	12	15	34	0·88	1·11
58	11·55	14·44	33·8	0·8	1
57·2	11·2	14	33	0·44	0·55
57	11·11	13·88	32	0	0
56·75	11	13·75	31	—0·44	—0·55
56	10·66	13·33	30·2	—0·8	—1
55·4	10·4	13	30	—0·88	—1·11
55	10·22	12·77	29·75	—1	—1·25
54·5	10	12·5	29	—1·33	—1·66
54	9·77	12·22	28·4	—1·6	—2
53·6	9·6	12	28	—1·77	—2·22

Fahrenheit.	Reaumur.	Centigrade, or Celsius's.	Fahrenheit.	Reaumur.	Centigrade, or Celsius's.
27·5	— 2	— 2·5	2	—13·33	—16·66
27	— 2·22	— 2·77	1·4	—13·6	—17
26·6	— 2·4	— 3	1	—13·77	—17·22
26	— 2·66	— 3·33	0·5	—14	—17·5
25·25	— 3	— 3·75	0	—14·22	—17·77
25	— 3·11	— 3·88	— 0·4	—14·4	—18
24·8	— 3·2	— 4	— 1	—14·66	—18·33
24	— 3·55	— 4·44	— 1·75	—15	—18·75
23	— 4	— 5	— 2	—15·11	—18·88
22	— 4·44	— 5·55	— 2·2	—15·2	—19
21·2	— 4·8	— 6	— 3	—15·55	—19·44
21	— 4·88	— 6·11	— 4	—16	—20
20·75	— 5	— 6·25	— 5	—16·44	—20·55
20	— 5·33	— 6·66	— 5·8	—16·8	—21
19·4	— 5·6	— 7	— 6	—16·88	—21·11
19	— 5·77	— 7·22	— 6·25	—17	—21·25
18·5	— 6	— 7·5	— 7	—17·33	—21·66
18	— 6·22	— 7·77	— 7·6	—17·6	—22
17·6	— 6·4	— 8	— 8	—17·77	—22·22
17	— 6·66	— 8·33	— 8·5	—18	—22·5
16·25	— 7	— 8·75	— 9	—18·22	—22·77
16	— 7·11	— 8·88	— 9·4	—18·4	—23
15·8	— 7·2	— 9	—10	—18·66	—23·33
15	— 7·55	— 9·44	—10·75	—19	—23·75
14	— 8	—10	—11	—19·11	—23·88
13	— 8·44	—10·55	—11·2	—19·2	—24
12·2	— 8·8	—11	—12	—19·55	—24·44
12	— 8·88	—11·11	—13	—20	—25
11·75	— 9	—11·25	—14	—20·44	—25·55
11	— 9·33	—11·66	—14·8	—20·8	—26
10·4	— 9·6	—12	—15	—20·88	—26·11
10	— 9·77	—12·22	—15·25	—21	—26·25
9·5	—10	—12·5	—16	—21·33	—26·66
9	—10·22	—12·77	—16·6	—21·6	—27
8·6	—10·4	—13	—17	—21·77	—27·22
8	—10·66	—13·33	—17·5	—22	—27·5
7·25	—11	—13·75	—18	—22·22	—27·77
7	—11·11	—13·88	—18·4	—22·4	—28
6·8	—11·2	—14	—19	—22·66	—28·33
6	—11·55	—14·44	—19·75	—23	—28·75
5	—12	—15	—20	—23·11	—28·88
4	—12·44	—15·55	—20·2	—23·2	—29
3·2	—12·8	—16	—21	—23·55	—29·44
3	—12·88	—16·11	—22	—24	—30
2·75	—13	—16·25	—23	—24·44	—30·55

Fahrenheit.	Reaumur.	Centigrade, or Celsius's.	Fahrenheit.	Reaumur.	Centigrade, or Celsius's.
—23·8	—24·8	—31	—32·8	—28·8	—36
—24	—24·88	—31·11	—33	—28·88	—36·11
—24·25	—25	—31·25	—33·25	—29	—36·25
—25	—25·33	—31·66	—34	—29·33	—36·66
—25·6	—25·6	—32	—34·6	—29·6	—37
—26	—25·77	—32·22	—35	—29·77	—37·22
—26·5	—26	—32·5	—35·5	—30	—37·5
—27	—26·22	—32·77	—36	—30·22	—37·77
—27·4	—26·4	—33	—36·4	—30·4	—38
—28	—26·66	—33·33	—37	—30·66	—38·33
—28·75	—27	—33·75	—37·75	—31	—38·75
—29	—27·11	—33·88	—38	—31·11	—38·88
—29·2	—27·2	—34	—38·2	—31·2	—39
—30	—27·55	—34·44	—39	—31·55	—39·44
—31	—28	—35	—40	—32	—40
—32	—28·44	—35·55			

FREEZING MIXTURES.

FORMULÆ FOR COOLING OR FREEZING MIXTURES.

(MR. WALKER.)

FRIGORIFIC MIXTURES WITHOUT ICE.

Mixtures.	Parts.	Thermometer sinks	Degree of cold produced.
Muriate of Ammonia	5	From + 50° to + 10°	= 40
Nitrate of Potassa	5		
Water	16		
Muriate of Ammonia	5	From + 50° to + 4°	= 46
Nitrate of Potassa	5		
Sulphate of Soda	8		
Water	16		
Nitrate of Ammonia	1	From + 50° to + 4°	= 46
Water	1		
Nitrate of Ammonia	1	From + 50° to — 7°	= 57
Carbonate of Soda	1		
Water	1		
Sulphate of Soda	3	From + 50° to — 30°	= 80
Diluted Nitric Acid	2		

Mixtures.	Parts.	Thermometer sinks	Degree of cold produced.
Sulphate of Soda	6	From + 50° to — 10°	= 60
Muriate of Ammonia	4		
Nitrate of Potassa	2		
Diluted Nitric Acid	4		
Sulphate of Soda	6	From + 50° to — 14°	= 64
Nitrate of Ammonia	5		
Diluted Nitric Acid	4		
Phosphate of Soda	9	From + 50° to — 12°	= 62
Diluted Nitric Acid	4		
Phosphate of Soda	9	From + 50° to — 21°	= 71
Nitrate of Ammonia	6		
Diluted Nitric Acid	4		
Sulphate of Soda	8	From + 50° to — 3°	= 53
Muriatic Acid	5		
Sulphate of Soda		From + 50° to — 3°	= 53
Diluted Sulphuric Acid			

FRIGORIFIC MIXTURES, WITH ICE.

Snow or pounded ice	2	From any temperature to — 5°	
Salt	1		
Snow or pounded ice		From any temperature to — 12°	
Common Salt	2		
Muriate of Ammonia	1		
Snow or pounded ice	24	From any temperature to — 18°	
Common Salt	10		
Muriate of Ammonia	5		
Nitrate of Potassa	5		
Snow or pounded ice	12	From any temperature to — 25°	
Common Salt	5		
Nitrate of Ammonia	5		
Snow	3	From + 32° to — 23°	= 55
Diluted Sulphuric Acid	2		
Snow	8	From + 32° to — 27°	= 59
Muriatic Acid	5		
Snow	7	From + 32° to — 30	= 62
Diluted Nitric Acid	4		
Snow	4	From + 32° to — 40°	= 72
Chloride of Calcium	5		

Mixtures.	Parts.	Thermometer sinks	Degree of cold produced.
Snow Cryst. Chloride of Calcium	2 3	From + 32° to — 50°	= 82
Snow Potassa	3 4	From + 32° to — 51°	= 83

COMBINATION OF FRIGORIFIC MIXTURES.

Phosphate of Soda Nitrate of Ammonia Diluted Nitric Acid	5 3 4	From 0° to — 34°	= 34
Phosphate of Soda Nitrate of Ammonia Diluted mixed Acids	3 2 4	From — 34° to — 50°	= 16
Snow Diluted Sulphuric or Nitric Acid	8 3	From — 10° to — 56°	= 46
Snow Diluted Nitric Acid	3 2	From 0° to — 46°	= 46
Snow Diluted Sulphuric Acid	1 1	From — 20° to — 60°	= 40
Snow Chloride of Calcium	3 4	From + 20° to — 48°	= 68
Snow Chloride of Calcium	3 4	From + 10° to — 54°	= 64
Snow Chloride of Calcium	2 3	From — 15° to — 68°	= 33
Snow Cryst. Chloride of Calcium	1 2	From 0° to — 66°	= 66
Snow Cryst. Chloride of Calcium	1 3	From — 40° to — 73°	= 33
Snow Diluted Sulphuric Acid	1 10	From — 68° to — 91°	= 23

EFFECTS OF TEMPERATURE.

	Degrees below zero.
Greatest artificial cold produced by the evaporation of a mixture of solid carbonic acid and ether, *in vacuo*, by Faraday	160
Ditto in the open air, by Thiloreir	135
Solid compound of alcohol and carbonic acid fuses	131
Greatest artificial cold produced by Walker	91
Strongest nitric acid freezes	55
Sulphuric ether congeals	47

	Degrees below zero.
Liquid ammonia freezes	46
Mercury freezes	39
Proof spirit and brandy freeze	7

	Degrees above zero.
Solution of 1 salt in 3 water, freezes	4
Solution of 1 salt in 4 water, freezes	7
Mixture of 1 alcohol 3 water, freezes	7
Solution of sal-ammoniac in 4 water	8
Oil of turpentine freezes	16
Strong wines freeze	20
Fluoric acid freezes	23
Oils of bergamot and cinnamon	23
Vinegar freezes	28
Milk freezes	30
Ice melts	32
Olive oil freezes	36
Glacial acetic acid solidifies	36
Medium temperature of the surface of the globe	50
Medium temperature of England	52
Oil of aniseed freezes	64
Lard melts	from 90 to 97
Heat of human blood	98
Phosphorus melts	99
Stearine from hogs' lard melts	109
Spermaceti melts	112
Tallow melts (Thomson)	92
——————(Nicholson)	127
Bees' wax melts	142
Ambergris melts (La Grange)	145
Potassium melts (Fownes)	150
—————— (Daniell)	136
Bleached wax melts (Nicholson)	155
Sodium perfectly fluid	200
Iodine fuses (Gay Lussac)	210
—————— (Fownes)	225
Sulphur fuses (Fownes)	226
Camphor fuses	303
Tin fuses	442
Bismuth fuses	476
Lead fuses	594
Zinc fuses	773
Antimony fuses	809
Red heat (Daniell)	980
Heat of common fire (Daniell)	1140
Brass fuses (Daniell)	1869
lver fuses (Daniell)	2233
on fuses	3479

TEMPERATURES AT WHICH CERTAIN SOLIDS AND LIQUIDS ARE VOLATILIZED.

	Degrees above zero.
Liquid Sulphurous acid boils (*anhydrous*)	14
Ether boils	98
Fuming sulphurous acid boils (*solution*)	113
Bisulphuret of carbon boils	126
Liquid ammonia boils	140
Pyroligneous spirit boils	150
Alcohol boils	176
——— (Black)	174
——— sp. gr. 0·800 (Henry)	172
Water boils	212
Phosphorus distils (Pelletier)	219
Water saturated with sea salt boils	225
Nitric acid boils (sp. gr. 1·5)	187
White oxide of arsenic sublimes	283
Oil of turpentine boils (Ure)	304
Petroleum boils (Ure)	316
Metallic arsenic sublimes	540
Phosphorus boils in close vessels	554
Sulphur boils	570
Sulphuric acid boils (Dalton)	590
——— (Black)	546
——— (Fownes)	620
Linseed oil boils	600
Mercury boils	662

BOILING-POINTS OF SATURATED SOLUTIONS.

Alum	220°	Sulphate of nickel	235°
Muriate of ammonia	236	Chlorate of potass	218
Oxalate of ammonia	218	Nitrate of potass	238
Tartrate of ammonia	230	Quadroxalate of potass	220
Chloride of barium	222	Acetate of soda	256
Nitrate of baryta	214	Nitrate of soda	246
Acetate of copper	214	Biborate of soda	222
Sulphate of copper	216	Carbonate of soda	220
Acetate of lead	212	Phosphate of soda	222
Chloride of calcium	220	Nitrate of strontia	224
Bichloride of mercury	214	Sulphite of zinc	220
Bicyanide of mercury	214	Boracic acid	218

TEMPERATURES TO BE OBSERVED IN CERTAIN PHARMACEUTICAL OPERATIONS.

In the fermentation of saccharine solutions, the highest temperature should not exceed 86° (Thomson).

The lowest temperature at which they will ferment is 38° (Thomson).

The process of acetous fermentation is best conducted at a temperature of about 86°.

The temperature requisite to coagulate albumen varies with the state of dilution. If the quantity of albumen be so great that the liquid has a slimy aspect, a heat of 145° or 150° suffices, but in a very dilute condition boiling is required (Fownes).

In the London Pharmacopœia.

When a boiling heat is directed, a temperature is meant of 212° Fahr.

When a gentle heat is directed, a temperature is meant of from 90° to 100°.

The specific gravities of substances ordered in the London Pharmacopœia are to be taken at a temperature of 62°.

A water bath is that by which any substance contained in a proper vessel is exposed either to hot water, or the vapour of boiling water. A sand bath is made of sand, to be gradually heated, in which anything is placed contained in a proper vessel.

Syrups are to be kept in a place where the temperature never exceeds 55°.

In drying vegetables, put them into very shallow wicker baskets soon after they are gathered, and expose them to a gentle heat and a current of air, excluded from light. When the moisture is expelled, increase the heat gradually to 150° F., until they are dried. Afterwards preserve them in suitable vessels, so as to exclude light and moisture.

In the Edinburgh Pharmacopœias.

Whenever mention occurs of the specific gravity of any body, its temperature is supposed to be at 60°.

CHEMICAL ELEMENTS, WITH THEIR SYMBOLS AND EQUIVALENTS.

The equivalents given in this table are founded upon the views generally received among Chemists with regard to the constitution of the compounds from the analysis of which the determinations have been made, and the numbers in the table represent the best and most recent results. In the case of mercury, however, the equivalent is represented as = 200, because this number accords with the constitution assigned to the compounds of mercury in the London Pharmacopœia, although 100 is now more generally assumed to be the equivalent of mercury.

	Symb.	Equiv.
Aluminum	Al.	13·7
Antimony (Stibium)	Sb.	129
Arsenic	As.	75
Barium	Ba.	68·5
Bismuth	Bi.	213
Boron	B.	10·9
Bromine	Br.	80
Cadmium	Cd.	56
Calcium	Ca.	20
Carbon	C.	6
Cerium	Ce.	47
Chlorine	Cl.	35·5
Chromium	Cr.	26·7
Cobalt	Co.	29·5
Columbium (Tantalum)	Ta.	184·0
Copper (Cuprum)	Cu.	31·7
Didymium	Dy.	50
Erbium	Er.	
Fluorine	F.	19
Glucinium	G.	6·9
Beryllium	Be.	
Gold (Aurum)	Au.	197
Hydrogen	H.	1
Iodine	I.	127
I idium	Ir.	99
Iron (Ferrum)	Fe.	28
Lanthanum	Ln.	47
Lead (Plumbum)	Pb.	103·7
Lithium	Li.	6·5
Magnesium	Mg.	12
Manganese	Mn.	27·6
Mercury (Hydrargyrum)	Hg.	200
Molybdenum	Mo.	46
Nickel	Ni.	29·6
Niobium	Nb.	
Nitrogen or Azote	N.	14

	Symb.	Equiv.
Norium	No.	
Osmium	Os.	99·6
Oxygen	O.	8
Palladium	Pd.	53·3
Pelopium	Pe.	
Phosphorus	P.	32
Platinum	Pt.	98·7
Potassium (Kalium)	K.	39
Rhodium	R.	52·2
Ruthenium	Ru.	52·2
Selenium	Se.	35·5
Silicium, or Silicon	Si.	21·3
Silver (Argentum)	Ag.	108
Sodium (Natrium)	Na.	23
Strontium	Sr.	43·8
Sulphur	S.	16
Tellurium	Te.	64·2
Terbium	Tb.	
Thorium	Th.	59·6
Tin (Stannum)	Sn.	58
Titanium	Ti.	25
Tungsten (Wolfram)	W.	92
Uranium	U.	60
Vanadium	V.	68·6
Yttrium	Y.	
Zinc	Zn.	32·6
Zirconium	Zr.	33·6

THE SOLUBILITY OF SALTS.

Name of Salt.	Sp. gr.	Solubility in 100 parts Water		Solubility in 100 parts Alcohol	
		at 60°	at Boiling-point.	at 60°	at Boiling-point.
ALUMINUM	2·67				
ALUMINA	3·9 to 3·97				
Acetate of	1·245	Undetermined			
Arseniate of	..	Insoluble			
Borate of	..	Uncrystallizable			
Camphorate of	..	0·05			
Lactate of	..	Uncrystallizable			
Muriate of	..	Very soluble		100 at 54½°	
Nitrate of	1·645	Very soluble			100
Oxalate of	..	Uncrystallizable			2·91
Phosphate of	..	Insoluble			
Seleniate of	..	Insoluble			

Name of Salt.	Sp. gr.	Solubility in 100 parts Water		Solubility in 100 parts Alcohol	
		at 60°	at Boiling-point.	at 60°	at Boiling-point.
ALUMINA.					
Sulphate of . . .	1·67	50			
Sulphate of, and Potash	1·71	5·4	133·33		
Sulphate of, and Soda	1·6	100			
Sulphite of . . .	..	Insoluble			
Tartrate of . . .	..	Uncrystallizable		2·91	
Tartrate of, and Potash	..	Uncrystallizable			
Tungstate of . . .	..	Insoluble			
Urate and Lithate of.	..	Insoluble			
AMMONIA.					
Acetate of . . .	..	Very soluble		Readily soluble	
Arseniate of . . .	..	Soluble			
Binarseniate of . .	..	Soluble			
Arsenite of . . .	..	Uncrystallizable			
Benzoate of . . .	..	Soluble			
Boletate of . . .	..	38			
Borate of	..	8½			0·416
Camphorate of . .	..	1.	33		
Carbonate of (Sesqui)	..	33 (*Ure*)			
	..	20 (*Brande*)			
Chlorate of . . .	..	Very soluble			
Chromate of . . .	..	Very soluble			
Citrate of. . . .	..	Difficultly crystallizable			
Ferrocyanide of . .	..	Very soluble			
Formate of . . .	..	Soluble			
Hydriodate of, (or Iodide of Ammonium)	..	Very soluble			
Hydrocyanate of . .	..	Soluble			
Hydrosulphuret of .	..	Very deliquescent			
Hypophosphite of .	..	Soluble and deliquescent			
Hyposulphite of . .	..	Very soluble			
Iodate of	..	Sparingly soluble			
Lactate of . . .	..	Uncrystallizable			
Meconate of . . .	..	66			
Molybdate of. . .	..	Soluble			
Muriate of, (or Chloride of Ammonium)	1·53	36	100	. . . . . 7 7·5 at 80° Sp. gr. of Spirits. ·900 4·75 do. ·872 1·5 do. ·834	
Nitrate of . . .	1·58	50	100		19·16
Oxalate of . . .	1·46	4·5.	40·84		

Name of Salt.	Sp. gr.	Solubility in 100 parts Water		Solubility in 100 parts Alcohol	
		at 60°	at Boiling-point.	at 60°	at Boiling-point.
AMMONIA.					
Phosphate of . . .	1·8	25 (*Brande*)			
Biphosphate of . .	..	Less soluble			
Phosphite of . . .	..	Very soluble			
Purpurate of . . .	..	·0066 much more			
Pyrolithate of . .	..	Soluble			
Suberate of . . .	..	Very soluble			
Succinate of . . .	..	Very soluble			
Sulphate of . . .	1·75	50 (*Brande*)	100		
Sulphite of . . .	..	100 (*Ure*)			
Tartrate of . . .	..	60·03	304·7	. . .	.2·91
Tungstate of . . .	..	Soluble			
ANTIMONY . .	6·72				
Acetate of . . .	..	Soluble (*Ure*)			
Benzoate of . . .	..	Soluble (*Ure*)			
Tartrate of . . .	..	Very soluble (*Brande*)			
Potassio-tartrate of .	..	7	.50		
BARIUM . .	4·00				
BARYTA . .	..	5 at 50°	10 at 212°		
Acetate of . . .	1·828	88.	.96		
Antimoniate of . .	..	Insoluble			
Antimonite of . .	..	Slightly			
Arseniate of . . .	..	Insoluble			
Arsenite of . . .	..	Difficultly			
Benzoate of . . .	..	Soluble			
Borate of	..	Very sparingly			
Camphorate of . .	..	Very sparingly			
Carbonate of . . .	4·331	Very nearly insoluble			
Chlorate of . . .	..	25			
Chromate of . . .	..	Very sparingly			
Citrate of. . . .	..	Difficultly soluble			
Ferrocyanuret of . .	..	·0005.	·01		
Hydriodate of, (or Iodide of Barium) .	..	Very soluble			
Hydrosulphuret of .	..	11.	.50		
Hypophosphite of .	..	Very soluble			
Iodate of	..	·33	1·6		
Lactate of . . .	..	Soluble			

Name of Salt.	Sp. gr.	Solubility in 100 parts Water		Solubility in 100 parts Alcohol	
		at 60°	at Boiling-point.	at 60°	at Boiling-point.
Baryta.					
Lithate of . . .	..	Insoluble			
Muriate of, (or Chloride of Barium) (Anhydrous) . .	2·825	36·8. .	68·5	1 at 80° Sp. gr. of Sprts. ·900 0·29. . ·848 0·18. . ·834 0·09. . ·817	
Muriate of (or Chloride of Barium) Cryst.	3·14	43 (*Brande*)	78	1·56 at 80° Sp. gr. of Sprts. ·900 0·43 . . ·848 0·32 . . ·834 0·06 . . 0·25 . .	
Nitrate of . . .	3·28	8·18 at 58·9° 35·18 at 214·97°			
Oxalate of . . .	..	Nearly insoluble			
Phosphate of . . .	1·286	Insoluble			
Phosphite of . . .	..	0·25			
Pyrocitrate of . .	..	·066 . .	·02		
Sulphate of . . .	4·3	Insoluble			
Sulphite of . . .	1·694	Insoluble			
Tartrate of . . .	..	Slightly			
Bismuth . .	9·77				
Acetate of . . .	..	Soluble			
Arseniate of . . .	..	Insoluble			
Benzoate of . . .	..	Soluble . . .		Sparingly.	
Carbonate of . . .	..	Insoluble			
Chloride of . . .	..	Deliquescent			
Nitrate of . . .	2·73	Decomposed			
Phosphate of . . .	..	Soluble			
Sulphate of . . .	..	Decomposed			
Cobalt . .	8·51				
Acetate of . . .	..	Soluble			
Antimoniate of . .	..	Soluble			
Arseniate of . . .	..	Insoluble			
Borate of	..	Scarcely			
Carbonate of . . .	..	Insoluble			
Lactate of . . .	..	·026 (*Ure*)			
Muriate, or Chloride of	..	Very soluble			
Nitrate of . . .	..	Soluble . . .			
Oxalate of . . .	..	Insoluble		100 at 54½°	
Sulphate of . . .	..	4 (*Brande*) .		Insoluble.	
Tartrate of . . .	..	Soluble			

Name of Salt.	Sp. gr.	Solubility in 100 parts Water		Solubility in 100 parts Alcohol	
		at 60°	at Boiling-point.	at 60°	at Boiling-point.
COPPER . .	8·862				
Acetate of . . .	1·78	(*Ure*)	20		
Antimoniate of . .	..	Insoluble			
Arseniate of . . .	..	Insoluble			
Benzoate of . . .	..	Slightly			
Borate of	..	Insoluble			
Carbonate of . . .	..	Insoluble			
Chlorate of . . .	..	Soluble			
Chromate of . . .	..	Insoluble			
Citrate of. . . .	..	Insoluble			
Ferrocyanide of . .	..	Insoluble			
Fluoride of . . .	..	Soluble			
Formate of . . .	1·815	12			
Hyposulphite of . .	..	Soluble			
Muriate, or Chloride of	3·05	Soluble . . .		100 at 176°	
Dichloride of . . .	3·37	Nearly insoluble			
Nitrate of. . . .	2·174	Deliquescent			
Oxalate of . . .	..	Soluble?			
„ and Ammonia	..	Soluble?			
„ and Potassa .	..	Soluble?			
„ and Soda .	..	Insoluble			
Phosphate of . . .	1·4158	Insoluble			
Subnitrate of . . .	..	Insoluble			
Sulphate of . . .	2·25	25 . . .	50		
Disulphate of. . .	..	Insoluble			
Trisulphate of . .	..	Insoluble			
Sulphite of Protoxide	..	Insoluble			
Sulphate of and Potassa	2·24	Soluble			
„ and Ammonia	1·89	Soluble			
Ammonio Subsulphate	..	66·6			
Tartrate of . . .	..	Soluble			
Bitartrate of . . .	..	Less soluble			
Tartrate of and Potassa	..	Soluble			
GOLD . .	19·25				
Perchloride of . .	..	Soluble			
Protochloride of . .	..	Soluble			
IRON . . .	7·788				
Acetate (Prot.) . .	1·368	Soluble			
Acetate (Per.) . .	..	Uncrystallizable			
Antimoniate of . .	..	Insoluble			

Name of Salt.	Sp. Gr.	Solubility in 100 parts Water		Solubility in 100 parts Alcohol	
		at 60°	at Boiling-point.	at 60°	at Boiling-point.
Iron.					
Arseniate of (Prot.) .	3·	Insoluble			
Arseniate of (Per.) .	..	Insoluble			
Benzoate of . . .	..	Insoluble			
Borate of	..	Insoluble			
Citrate (Proto.) . .	..	Soluble			
Citrate (Biproto.) .	..	Sparingly soluble			
Citrate Per. . . .	..	Very soluble and uncrystallizable			
Ferrocyanide (Prussian Blue) . . .	..	Insoluble			
Fluoride of . . .	..	Insoluble			
Gallate of Peroxide of	..	Insoluble			
Hyposulphite of . .	..	Soluble			
Lactate of Protox. of	..	Scarcely			
Molybdate of Protox. of	..	Insoluble			
Protochloride of . .	..	Soluble			
Perchloride of . .	..	Very soluble .		100 at 176°	
Nitrate of Protoxide of	..	Uncrystallizable			
Nitrate of Peroxide of	..	Very soluble			
Oxalate of Protoxide of	..	Soluble			
Oxalate of Peroxide of	..	Scarcely			
Phosphate of . . .	2·6	Insoluble			
Phosphate of Perox. of	..	Nearly insoluble			
Superphosphate of .	..	Nearly insoluble			
Succinate of Peroxide of	..	Insoluble			
Sulphate of (Cryst.) .	1·85	76·238 (*Brande*)	333·3		
Sulphate of (Dry) .	2·64				
Persulphate of . .	..	Uncrystallizable		Soluble	
Hyposulphite of . .	..	Uncrystallizable			
Persulphate of & Potassa	..	Soluble			
„ and Ammonia	..	Soluble			
Tartrate (Proto.) of .	..	0·25 (*Dumas*)			
Tartrate (Per.) of .	..	Soluble			
Tartrate of and Potassa	..	Uncrystallizable		Soluble	
Lead . . .	11·33				
Acetate (Cryst.) . .	2·345	27 (*Bostock*)	29	12·5 (*Brande*)	
Acetate (Anhyd.) .	2·57	. . .		Soluble	
Diacetate of . . .	..	Soluble			
Antimoniate of . .	..	Insoluble			
Arseniate of . . .	..	Insoluble			

Name of Salt.	Sp. Gr.	Solubility in 100 parts Water		Solubility in 100 parts Alcohol	
		at 60°	at Boiling-point.	at 60°	at Boiling-point.
LEAD.					
Benzoate of	..	Insoluble			
Borate of	..	Insoluble			
Carbonate of	6·4 to 6·75	Insoluble			
Citrate of	..	Nearly insoluble			
Chlorate of	..	Soluble			
Chloride of	1·823	3·33 (*Brande*)	4·5		
Chloride of (fused)	5·13				
Chromate of	5·65	Insoluble			
Ferrocyanuret of	..	Insoluble			
Gallate of	..	Insoluble			
Iodide of	..	0·08	0·5		
Hyposulphite of	..	Soluble			
Lactate of	..	Soluble (*Ure*)			
Superlactate of	..	Soluble			
Malate of	..	Scarcely			
Molybdate of	..	Insoluble			
Nitrate of	4·	13			
Dinitrate of	..	Scarcely at 60°, but much more so at 212°			
Oxalate of	..	Insoluble			
Phosphate of	..	Insoluble			
Phosphite of	..	Insoluble			
Succinate of	..	Insoluble			
Sulphate of	..	Not absolutely insoluble			
Sulphite of	..	Insoluble			
Tannate of	..	Insoluble			
Tartrate of	..	Almost insoluble			
„ and Potassa	..	Insoluble (*Berzelius*)			
LIME	2·3908	(*Kirwan*)			
Acetate of	1·005	Soluble		2·4 at 80° = ·900 4·12 .. = ·848 4·75 .. = ·834 4·88 .. = ·817	(Sp. gr. of Sprts.)
Antimoniate of	..	Insoluble			
Arseniate of	..	Insoluble			
Arsenite of	..	Difficultly soluble			
Benzoate of	..	Sparingly soluble			
Borate of	..	Very difficultly			

Name of Salt.	Sp. Gr.	Solubility in 100 parts Water		Solubility in 100 parts Alcohol	
		at 60°	at Boiling-point.	at 60°	at Boiling-point.
LIME.					
Carbonate of (Anhyd.)	2·7	Insoluble			
Chlorate of . . .	..	Very soluble .		Soluble	
Chromate of . . .	..	Soluble			
Citrate of . . .	..	Nearly insoluble			
Fluoride of . . .	3·15	Insoluble			
Hypophosphite of .	..	Solubility nearly equal at all temperatures			
Hyposulphate of . .	..	40·65(*Brande*)	150		
Hyposulphite of . .	..	Very soluble			
Iodate of	..	20	100		
Iodide of Calcium .	..	Deliquescent			
Malate of . . .	..	·66	1·53		
Molybdate of . .	..	Insoluble			
Muriate, (or Chlor of Calcium) . e	1·76	200 at 32° 400 at 60° almost any quantity at 220°			
Nitrate of . . .	1·62	25		. . . .	161·66
Oxalate of . . .	..	Insoluble			
Phosphate of . . .	..	Insoluble			
Biphosphate of . .	..	Soluble			
Subphosphate of . .	3·	Almost insoluble			
Succinate of . . .	..	Difficultly soluble			
Sulphate of . . .	..	0·301 at 50°			
Sulphite of . . .	..	12·5			
Tartrate of . . .	1·9009	Nearly insoluble at 60°, but ·16 at 212°			
Tungstate of . . .	..	Insoluble			
LITHIA.					
Acetate of . . .	..	Deliquescent			
Bicarbonate of . .	..	Slightly soluble			
Borate of	..	Soluble			
Carbonate of . . .	..	1.		Insoluble	
Chloride of Lithium .	..	Very deliquescent			
Chromate of . . .	..	Very soluble			
Citrate of. . . .	..	Very difficultly soluble			
Nitrate of . . .	..	Very deliquescent			

Name of Salt.	Sp. Gr.	Solubility in 100 parts Water		Solubility in 100 parts Alcohol	
		at 60°	at Boiling-point.	at 60°	at Boiling-point.
LITHIA.					
Oxalate of . . .	..	Very deliquescent			
Binoxalate of. . .	..	Less soluble			
Phosphate of . . .	..	Insoluble			
Sulphate of . . .	..	Soluble			
Tartrate of . . .	..	Easily soluble			
„ and Potassa.	..	Easily soluble			
„ and Soda .	..	Easily soluble			
MAGNESIA . .	2·3				
Acetate of . . .	1·378	Very soluble			
Arseniate of . . .	..	Deliquescent			
Arsenite of . . .	..	Difficultly soluble			
Benzoate of . . .	..	Soluble			
Borate of	2·566	Insoluble			
Carbonate of . . .	..	Very slightly			
Chlorate of . . .	..	Very soluble			
Chloride of Magnesium	1·6	200 (*Brande*)		50 at 80° 21·25.	547 S. gr. of Sprts. ·817 ·900
Chromate of . . .	..	Very soluble			
Citrate of. . . .	..	Difficultly soluble			
Iodide of Magnesium	..	Soluble			
Malate of. . . .	..	3·56 (*Brande*)			
Molybdate of. . .	..	6·66	8·35		
Nitrate of	1·46	100		Nearly insoluble in pure alcohol 11	sp. gr. ·840
Oxalate of . . .	..	Nearly insoluble			
Phosphate of . . .	1·55	6·66			
„ and Ammonia	..	Sparingly soluble			
Succinate of . . .	..	Uncrystallizable			
Sulphate of (dry) .	..	33·192	73·57		
Sulphate of (cryst.) .	1·66	68·042	150·71	1 at 80° (*Kirwan*)	
„ and Ammonia	1·72	Soluble			
„ and Potassa.	2·07	Soluble			
„ and Soda .	..	33·3			
Sulphite of . . .	1·38	5			
„ and Ammonia	..	Difficultly soluble			
Tartrate of . . .	..	Insoluble			
Tungstate of . . .	..	Soluble			

Name of Salt.	Sp. Gr.	Solubility in 100 parts Water		Solubility in 100 parts Alcohol	
		at 60°	at Boiling-point.	at 60°	at Boiling-point.
MANGANESE .	8·02				
Acetate of . . .	..	3.		Soluble	
Ammonio-chloride of	..	Soluble			
Ammonio-sulphate of	..	Soluble			
Antimoniate of . .	..	Moderately soluble			
Arseniate of . . .	..	Insoluble			
Benzoate of . . .	..	Deliquescent (*Brande*)			
Carbonate of . . .	..	Insoluble			
Chromate of . . .	..	Soluble			
Nitrate of. . . .	..	Very soluble		Soluble	
Oxalate of . . .	..	Insoluble			
Phosphate of . . .	..	Nearly insoluble			
Succinate of . . .	..	1 (*Ure*)			
Sulphate of . . .	2·877	31 (*Ure*)	50 (*Brande*)		
Hyposulphate of . .	..	Deliquescent			
Sulphite of . . .	..	Insoluble			
Tungstate of . . .	..	Insoluble			
MERCURY .	14·00				
Acetate of (Prot.) .	..	0·16 (*Braconnot*)			
Acetate of (Per.) .	..	Readily soluble			
Arseniate of . . .	..	Insoluble			
Benzoate of . . .	..	Insoluble			
Borate of	2·66	Insoluble			
Bichloride of . . .	6·2 (*Hasenfratz*)	6·25 (*Brande*)	33·3	42·6	85·2
	6·5 (*Graham*)	. . .		10·74 at 50° Sprts. sp. gr. ·915	43·66 at 50° Sprts. sp. gr. ·818 (*Graham.*)
Chloride of . . .	7·176	·00833 at 212° (*Dumas*)			
Chromate of . . .	..	Insoluble			
Citrate of . . .	..	Insoluble			
Bicyanuret of . .	..	. . 54			
Fluoride of . . .	..	Soluble			
Molybdate of . .	..	Very sparingly			
Nitrate (Prot.) . .	4·78	Soluble and decomposed by excess			
Nitrate (Per.) . .	..	Do. do.			
Oxalate of (Proto.) .	4·98	Scarcely			

Name of Salt.	Sp. Gr.	Solubility in 100 parts Water		Solubility in 100 parts Alcohol	
		at 60°	at Boiling-point.	at 60°	at Boiling-point.
MERCURY.					
Oxalate of (Per.) .	..	Insoluble			
Sulphate of (Proto.) .	..	0·20	0·33		
Sulphate of (Per.) .	..	Decomposed			
Sulphate of (Sub.) .	6·444	·005	0·33		
Tartrate of . . .	..	Insoluble			
„ and Potassa	..	Soluble			
NICKEL . .	8·33				
Acetate of . . .	..	Very soluble			
Arseniate of . . .	..	Soluble (*Ure*)			
Carbonate of . . .	..	Insoluble			
Chloride of . . .	..	Soluble in hot water			
Nitrate of Protox. .	..	50		Soluble	
„ and Ammonia	..	Soluble			
Oxalate of . . .	..	Insoluble			
Phosphate of . . .	..	Nearly insoluble			
Sulphate of . . .	2·03	33·3	185·71		
„ and Ammonia	..	25			
„ and Potassa	2·19	11·1			
„ and Iron .	..	Soluble			
Tartrate of . . .	..	Very soluble			
PLATINUM . .	20·98				
Protochloride of . .	..	Soluble . . .		Easily soluble, also in Ether	
Perchloride of . .					
Protochloride of . .	..	Soluble . . .		Insoluble	
„ and Ammonium					
„ and Potassium	..	Soluble . . .		Insoluble	
„ and Sodium .	..	Uncrystallizable		Very soluble	
Bichloride of . . .	..	Very sparingly			
„ and Ammonium					
„ and Potassium	..	Very sparingly			
„ and Sodium .	..	Soluble . . .		Soluble	
„ and Barium .	..	Soluble			
Protonitrate of . .	..	Soluble			
Pernitrate of . . .	..	Soluble			
Protosulphate of . .	..	Soluble			
Persulphate of . .	..	Very soluble .		Very soluble, also in Ether	

Name of Salt.	Sp. Gr.	Solubility in 100 parts Water		Solubility in 100 parts Alcohol	
		at 60°	at Boiling-point.	at 60°	at Boiling-point.
POTASSIUM .	0·865				
POTASSA . .	1·706				
Acetate of . . .	..	100		. . .	200
Ammonio-oxalate of .	..	Soluble			
Ammonio-sulphate of	..	13			
Ammonio-tartrate of	..	Very soluble			
Antimoniate of . .	..	Slightly			
Antimonite of . .	..	Soluble			
Arseniate of . . .	..	Uncrystallizable		3·75	
Binarseniate of . .	..	18·86 at 40°		Insoluble	
Arsenite of . . .	..	Uncrystallizable			
Benzoate of . . .	..	Very soluble			
Bibenzoate of . .	..	10			
Borate of	..	Soluble			
Camphorate of . .	..	1 . .	25		
Carbonate of . . .	2·6	100			
Bicarbonate of . .	2·085	25 . .	83		
Chlorate of . . .	..	6·03	60 at 188½°		
Chromate of . . .	2·6	48	extremely	Insoluble	
Bichromate of . .	2·692	10	much more		
Citrate of . . .	..	Very soluble			
Columbate of . .	..	Uncrystallizable			
Ferrocyanide of . .	1·83	33·3 . .	100		
Iodide of Potassium .	3·05	143 at 65 (*G. Lussac*		Sparingly	
Iodate of	..	7·14 (*Brande*)			
Molybdate of . .	..	Soluble			
Chloride of Potassium	1·90	29·21 at 66·83° 59·26 at 229·28		2·083 4·62 at 80° (Sp. gr. of Sprts. ·900) 1·66 . . (Sp. gr. of Sprts. ·812) 0·38 . . (Sp. gr. of Sprts. ·834)	
Nitrate of . . .	2·073	29·31 at 64° 236·45 at 207° 285· at 238°		. . .	2·083
Oxalate of . . .	2·10	50 (*Ure*) . . 30 (*Brande*) .		2·76 at 80° sp. gr. ·900 1 . . of Sprts. ·872	
Binoxalate of. . .	1·96	(10 *Brande*) (*Ure* 100)			
Quadroxalate of . .	1·81	. .	66·66	. . .	2·91
Phosphate of . . .	..	Difficultly soluble			
Diphosphate of . .	..	Soluble in hot water			
Biphosphate of . .	2·85	Very soluble			
Hypophosphite of .	..	Very deliquescent		Very soluble	
Hyposulphate of . .	..	Difficultly solub. at 60° readily at 212°			
Hyposulphite of . .	..	Deliquescent			

Name of Salt.	Sp. Gr.	Solubility in 100 parts Water		Solubility in 100 parts Alcohol	
		at 60°	at Boiling-point.	at 60°	at Boiling-point.
Potassa.					
Hyposulphite of and Silver	..	Difficultly			
Succinate of	..	Very soluble			
Sulphate of	2·64	10·57 at 54°	26·33 at 214°		
Bisulphate of	2·47	50 at 40°	200 at 220°		
Sulphite of	1·586	100			
Tartrate of	1·556	100			0·416
Bitartrate of	1·95	1·05	6·66		2·91
Tartrovinate of	..	10	any quantity		
Tungstate of	..	Uncrystallizable			
Nitro-tungstate of	..	(*Ure*) 5			
Silver	10·49				
Acetate of	..	Very difficultly soluble			
Arseniate of	..	Insoluble			
Arsenite of	..	Insoluble			
Borate of	..	Difficultly soluble			
Chlorate of	..	25 (*Chenevix*)			
Chromate of	..	Very slightly			
Citrate of	..	Insoluble			
Molybdate of	..	Insoluble			
Chloride of (Fused)	5·45	Insoluble			
Nitrate of (Cryst.)	3·521	100	200		25
Oxalate of	..	Insoluble			
Phosphate of	7·3	Insoluble			
Succinate of	..	Soluble			
Sulphate of	..	1·15			
Sulphite of	..	Very little soluble			
Hyposulphite of	..	Soluble			
,, and Potassa	..	Difficultly soluble			
Tartrate of	..	Soluble			
,, and Potassa	..	Soluble			
Sodium Soda.	0·953				
Acetate of	2·1	35	150		
Arseniate of	1·76	10 (*Thompson*)	25 (*Ure*)		

Name of Salt.	Sp. Gr.	Solubility in 100 parts Water		Solubility in 100 parts Alcohol	
		at 60°	at Boiling-point.	at 60°	at Boiling-point.
Soda.					
Binarseniate of	..	Soluble			
„ and Potassa	..	Soluble			
Benzoate of	..	Very soluble			
Biborate of	1·73	8·033	50		
Carbonate of Cryst.	1·45	50	100		
Bicarbonate of	2·19	7·6			
Chlorate of	..	33·3.		Sol. in sp. rect.	
Chromate of	..	Very soluble		Sparingly	
Citrate of	..	100 or more (*Brande*)			
Iodide of Sodium	..	173			
Iodate of	..	7·3		Insoluble	
Molybdate of	..	Soluble			
Muriate of (or Chloride of Sodium)	2·01	Equally soluble at all temperatures (*Berz.*)		5·8 at 80° Sp. gr. of Sprts. ·900 3·6 ·872 0·5 ·834	
Nitrate of	2·18	33·3 at 60° *Dumas* 100 at 123° *Dumas* 50 at 60° *Berzel.* 73 at 32° *Gay Lussac* 173 at 212° *Gay Lussac* 80 at 32° *Marx* 22·7 at 50° *Marx* 55 at 61° *Marx* 218·5 at 246° *Marx*		10·5 at 80° Sp. gr. of Sprts. 9·58 ·900 6 ·872 0·38 ·834	
Oxalate of	..	Sparingly soluble			
Phosphate of	1·33	25	50		
„ and Ammonia	1·50	Soluble			
Biphosphate of	..	Very soluble			
Hypophosphite of	..	Very soluble		Very soluble	
Succinate of	..	Soluble			
Sulphate of (Cryst.)	1·46	48·28 at 64° 322·12 at 91°			
Sulphate of (dry)	2·59	16·73 at 64° (*Gay Lussac*) 50·65 at 91° (*Gay Lussac*) 42·65 at 217° (*Gay Lussac*)		Insoluble	
Hyposulphate of	..	41·6	91	Insoluble	
Bisulphate of	2·74	50			
Sulphate of & Ammonia	..	Soluble			
Sulphite of	2·95	25			
Hyposulphite of	..	Deliquescent		Insoluble	
Tartrate of	1·980	56·37 (*Thompson*)		Insoluble	

Name of Salt.	Sp. Gr.	Solubility in 100 parts Water		Solubility in 100 parts Alcohol	
		at 60°	at Boiling-point.	at 60°	at Boiling-point.
SODA.					
Tartrate of and Potassa	..	20		Sol. in sp. rect., but sparingly in absolute alcohol	
Tartrovinate of . .	..	Soluble . . .			
Tungstate of . . .	..	25 . . .	50		
STRONTIUM . STRONTIA .	4·5 ..	0·625 at 60° 5 at 212°	(*Ure*)		
Hydrate of . . .	..	2 . . .	50		
Acetate of . . .	..	Very soluble			
Arseniate of . . .	..	Sparingly soluble			
Arsenite of . . .	..	Sparingly soluble			
Borate of	..	0·76			
Carbonate of . . .	3·66	0·0651 at 212°			
Chlorate of . . .	..	Very soluble .		Soluble	
Chloride of Strontium	2·83	50		Soluble	
Chromate of . . .	..	Insoluble(*Brande*)			
Citrate of . . .	..	Soluble			
Ferrocyanuret of .	..	25			
Iodide of Strontium .	..	Soluble			
Iodate of	..	25			
Nitrate of . . .	2·70	. . .	113		
Oxalate of . . .	..	. . .	0·52		
Phosphate of . . .	..	Insoluble			
Phosphite of . . .	..	Soluble			
Hypophosphite of .	..	Very soluble			
Succinate of . . .	..	Soluble			
Sulphate of . . .	..	0·026 at 212°			
Hyposulphite of . .	..	20 (*Gay Lussac*)		Insoluble	
Hyposulphate of . .	..	22·22 .	66·66		
Tartrate of . . .	1·837	0·67 at 170°			
TIN . .	7·28				
Acetate of . . .	..	Soluble			
Arseniate of . . .	..	Insoluble			
Borate of	..	Insoluble			
Nitrate Proto. of .	..	Uncrystallizable			
Nitrate Per. of . .	..	Scarcely			
Oxalate of . . .	..	Soluble			
Phosphate of . . .	..	Insoluble			
Succinate of . . .	..	Soluble			

Name.	Sp. Gr.	Solubility in 100 parts Water		Solubility in 100 parts Alcohol	
		at 60°	at Boiling-point.	at 60°	at Boiling-point.
Tin.					
Sulphate Proto. of .	..	Crystallizable			
Sulphate Per. of . .	..	Uncrystallizable			
Tartrate of . . .	..	Soluble			
„ and Potassa	..	Very soluble			
Zinc . .	6·861				
Acetate of . . .	..	Very soluble			
Antimoniate of . .	..	Very sparingly			
Borate of	..	Insoluble			
Chromate of . . .	..	Sparingly			
Citrate of . . .	..	Scarcely			
Chlorate of . . .	..	Very soluble			
Chloride of . . .	1·577	Very soluble .		100 at 54½°	
Iodide of	..	Soluble			
Iodate of	..	Difficultly soluble			
Lactate of . . .	..	2 (*Ure*)			
Nitrate of . . .	2·0	Deliquescent			
Molybdate of. . .	..	Insoluble			
Oxalate of . . .	..	Nearly insoluble			
Phosphate of. . .	..	Uncrystallizable			
Succinate of . . .	..	Soluble			
Sulphate of . . .	1·93	140 (*Dumas*)			
Sulphite of . . .	..	81·81 at 220° .		Insoluble	
Hyposulphite of . .	..	Soluble . . .		Soluble	
Sulphate of, and Nickel	..	33·33			
Tartrate of . . .	..	Difficultly soluble			
Tartrovinate of . .	..	Soluble . . .		Sparingly soluble	
Trisulphate of . .	..	Soluble			

SOLUBILITY OF ACIDS, BASES, &c.

Name.	Sp. gr.	Solubility in 100 parts Water		Solubility in 100 parts Alcohol	
		at 60°	at Boiling-point.	at 60°	at Boiling-point.
Acid.					
Arsenious					
Vitreous .	3·7385	1·78 (*Graham*)	9·68		
Opaque .	3·699	2·9 (*Graham*)	11·47		
Benzoic	..	·50			
Boracic	..	3·9	33·3	20 at 176° (*Henry*)	
Citric	1·0345	133·33	200	Soluble	
Gallic	..	5	33·33		
Oxalic (Cryst.) . .	1·62	11·5			
Succinic (Cryst.) . .	..	4	33·33	74 at 176°	
Tartaric	1·6	150 (*Brande*)	200	Soluble	
Brucia	..	·1177.	0·2		
Cinchonia	..	Insoluble	0·04		
Morphia	..	Nearly insolub.	1		
Quinia	..	Nearly insolub.	0·5		
Strychnia	..	0·04 (*Graham*)	0·15		
Camphor	0·9887	0·229		75 at 176°	
Cane Sugar . . .	1·59	200			

EXPLANATION OF TERMS USED IN PRESCRIPTIONS.

A. aa., *ana* (Greek) of each. It signifies equally by weight or by measure.

Abdom., *abdomen*, the abdomen, the belly.

Abs. febr., *absente febre*, fever being absent.

Ad catharsis, until purging occurs.

Ad 2 vic., *ad secundum vicem*, to the second time; or *ad duas vices*, for two times.

Ad gr. acid., *ad gratam aciditatem*, to an agreeable acidity.

Ad def. animi, *ad defectionem animi*, to fainting.

Ad del. an., *ad deliquium animi*, to fainting.

Ad libit., *ad libitum*, at pleasure.

Add., *adde*, or *addantur*, add, or let them be added; *addendus*, to be added.

Adjac., *adjacens*, adjacent.

Admov., *admove*, *admoveatur*, *admoveantur*, apply, let it be applied, let them be applied.
Ads. febre, *abstante febre*, while the fever is present.
Alter. hor., *alternis horis*, every other hour.
Alvo adstr., *alvo adstrictâ*, when the bowels are confined.
Aq. astr., *aqua astricta*, frozen water.
Aq. bull., *aqua bulliens*, boiling water.
Aq. com., *aqua communis*, common water.
Aq. fluv., *aqua fluviatilis*, river water.
Aq. mar., *aqua marina*, sea water.
Aq. niv., *aqua nivalis*, snow water.
Aq. pluv., *aqua pluviatilis*, or *pluvialis*, rain water.
Aq. ferv., *aqua fervens*, hot water.
Aq. font., *aqua fontana*, or *aqua fontis*, spring water.
Bis ind., *bis indies*, twice a-day.
Bib., *bibe*, drink.
B.A., *balneum arenæ*, a sand bath.
BB., *Bbds.*, *Barbadensis*, Barbadoes, as *aloë Barbadensis*.
B.M., *balneum mariæ*, or *balneum maris*, a warm-water bath.
Bull., *bulliat*, boil.
But., *butyrum*, butter.
B. V., *balneum vaporis*, a vapour bath.
Cærul., *cæruleus*, blue.
Cap., *capiat*, let him (or her) take.
Calom. calomelas, calomel, protochloride of mercury.
C.C., *cornu cervi*, hartshorn; it may also signify *cucurbitula cruenta*, the cupping-glass with scarificator.
C.C.U., *cornu cervi ustum*, burnt hartshorn.
Cochleat., *cochleatim*, by spoonfuls.
Coch. ampl., *cochleare amplum*, a large (or table) spoonful; about half a fluid ounce.
Coch. infant., *cochleare infantis*, a child's spoonful.
Coch. magn., *cochleare magnum*, a large spoonful.
Coch. med., *cochleare medium* } a middling or moderate spoonful; that is, a
Coch. mod., *cochleare modicum* } dessert spoonful—about two fluid drachms.
Coch. parv., *cochleare parvum*, a small (or tea) spoonful; it contains about one fluid drachm.
Col., *cola*, strain.
Col., *colatus*, strained.
Colet., *coletur*, *colat.*, *colatur*, let it be strained; *colaturæ*, to the strained liquor.
Colent., *colentur*, let them be strained.
Color., *coloretur*, let it be coloured.
Comp., *compositus*, compounded.
Cong. congius, a gallon.
Cons., *conserva*, conserve; also (*imperat. of conservo*) keep.
Cont., *contunde*, bruise.
Cont., *rem.*, or *med.*, *continuentur remedia*, or *medicamenta*, let the remedies, or the medicines, be continued.
Coq., *coque*, boil; *coquantur*, let them be boiled.

Coq. ad med. consumpt., *coque*, or *coquatur ad medietatis consumptionem*, boil, or let it be boiled to the consumption of one-half.
Coq. S. A., *coque secundum artem*, boil according to art.
Coq. in S. A., *coque in sufficiente quantitate aquæ*, boil in a sufficient quantity of water.
Cort., *cortex*, bark.
C. v., *cras vespere*, to-morrow evening.
C. m. s., *cras mane sumendus*, to be taken to-morrow morning.
C. n., *cras nocte*, to-morrow night.
Crast., *crastinus*, for to-morrow.
Cuj., *cujus*, of which.
Cujusl., *cujuslibet*, of any.
Cyath. theæ, *cyatho theæ*, in a cup of tea.
Cyath., *cyathus*, vel
C. vinar., *cyathus vinarius*, } a wine-glass; from an ounce and half to two ounces and half.
Deaur. pil., *deaurentur pilulæ*, let the pills be gilt.
Deb. spiss., *debita spissitudo*, due consistence.
Dec., *decanta*, pour off.
Decub. hor., *decubitûs horâ*, at the hour of going to bed, or at bed-time.
De d. in d., *de die in diem*, from day to day.
Deglut., *deglutiatur*, let it be swallowed.
Dej. alv., *dejectiones alvi*, stools.
Dep., *depuratus*, purified.
Det., *detur*, let it be given.
Dieb. alt., *diebus alternis*, every other day.
Dieb. tert., *diebus tertiis*, every third day.
Dig. digeratur, let it be digested.
Dil. dilue., *dilutus*, dilute (thin), diluted.
Diluc., *diluculo*, at break of day.
Dim., *dimidius*, one-half.
D. in 2 plo., *deter in duplo*, let it be given in twice the quantity.
D. in p. æq., *dividatur in partes æquales*, let it be divided in equal parts.
D. P., *directione propria*, with a proper direction.
Donec alv. bis dej., *donec alvus bis dejecerit*, until the bowels have been twice opened.
Donec alv. sol., *fuer.*, *donec alvus soluta fuerit*, until the bowels have been loosened.
Donec dol. neph. exulav., *donec dolor nephriticus exulaverit*, until the nephritic pain has been removed.
D., *dosis*, a dose.
Eburn., *eberneus*, made of ivory.
Ed., *edulcorata*, edulcorated.
Ejusd., *ejusdem*, of the same.
Elect., *electuarium*, an electuary.
Enem., *enema*, a clyster.
Exhib., *exhibeatur*, let it be administered.
Ext. sup. alut. moll., *extende super alutam mollem*, spread upon soft leather.
F., *fac*, make; *fiat*, *fiant*, let it be made, let them be made.

F. pil., *fiant pilulæ*, let pills be made.
Fasc., *fasciculus*, a bundle.
Feb. dur., *febre durante*, during the fever.
Fem. intern., *femoribus internis*, to the inside of the thighs.
F. venæs., *fiat venæsectio*, let venesection be performed.
F. H., *fiat haustus*, let a draught be made.
Fict., *fictilis*, earthen.
Fil., *filtrum*, a filtre.
Fist. arm., *fistula armata*, a clyster-pipe and bladder fitted for use.
Fl., *fluidus*, fluid.
F. L. A., *fiat lege artis*, let it be made by the rules of art.
F. M., *fiat mistura*, let a mixture be made.
F. S. A., *fiat secundum artem*, let it be made according to art.
Gel. quav., *gelatina quavis*, in any jelly.
G. G. G., *gummi guttæ gambæ*, gamboge.
Gr., *granum*, a grain; *grana*, grains.
Gr. vi. pond., *grana sex pondere*, six grains by weight.
Gtt., *gutta*, a drop; *guttæ*, drops.
Gtt. quibusd., *guttis quibusdam*, with some drops.
Guttat., *guttatim*, by drops.
Har. pil. sum. iij., *harum pilularum sumantur tres*, of these pills let three be taken.
H. D., or *hor. decub.*, *horâ decubitûs*, at bed-time.
H. P., *haustus purgans*, purging draught.
H. S., *horâ somni*, at the hour of going to sleep.
Hor. un. spatio, *horæ unius spatio*, at the expiration of one hour.
Hor. interm., *horis intermediis*, in the intermediate hours.
Hor. 11*mâ. mat.*, *horâ undecimâ matutinâ*, at 11 o'clock in the morning.
Ind., *indies*, daily.
In pulm., *in pulmento*, in gruel.
Inf., *infunde*, infuse.
Jul., *julepus*, *julapium*, a julep.
Inj. enem. injiciatur enema, let a clyster be thrown up.
Kal. ppt., *kali præparatum*, prepared kali (*potassæ carbonas*, Ph. L.)
Lat. dol., *lateri dolenti*, to the affected side.
M., *misce*, mix; *mensurâ*, by measure; *manipulus*, a handful; *minimum*, a minim.
Mane pr., *mane primo*, early in the morning.
Man., *manipulus*, a handful.
Min., *minimum*, a minim, the 60th part of a drachm measure.
M. P., *massa pilularum*, a pill mass.
M. R., *mistura*, a mixture.
Mic. pan., *mica panis*, crumb of bread.
Mitt., *mitte*, send; *mittantur*, let them be sent.
Mitt. sang. ad ℥*xij.*, *mitte sanguinem ad* ℥*xij.*, take blood to twelve ounces.
Mod. præscr., *modo præscripto*, in the manner directed.
Mor. dict., *more dicto*, in the way ordered.
Mor. sol., *more solito*, in the usual way.

Ne tr. s. num., *ne tradas sine nummo*, do not deliver it without the money.
N. M., *nux moschata*, a nutmeg.
No., *numero*, in number.
O., *octarius*, a pint.
Ol. lini s. i., *oleum lini sine igné*, cold-drawn linseed oil.
Omn. hor., *omni horâ*, every hour.
Omn. bid., *omni biduo*, every two days.
Omn. bih. omni bihorio, every two hours.
O. M., or *omn. man.*, *omni mane*, every morning.
O. N., or *omn. noct.*, *omni nocte*, every night.
Omn. quadr. hor., *omni quadrante horæ*, every quarter of an hour.
O. O. O., *oleum olivæ optimum*, best olive oil.
Ov., *ovum*, an egg.
Oz., the ounce avoirdupois, or common weight, as contradistinguished from that prescribed by physicians.
P. æ., *part. æqual.*, *partes æquales*, equal parts.
P. d., *per deliquium*, by deliquescence.
Past., *pastillus*, a pastil, or ball of paste.
P., *pondere*, by weight.
Ph. D., *Pharmacopœia Dubliniensis.*
Ph. E., *Pharmacopœia Edinensis.*
Ph. L., *Pharmacopœia Londinensis.*
Ph. U.S., *Pharmacopœia of the United States.*
Part. vic., *partitis vicibus*, in divided doses.
Per. op. emet., *peractâ operatione emetici*, the operation of the emetic being over.
Pocul., *poculum*, a cup.
Pocill., *pocillum*, a small cup.
Post sing. sed. liq., *post singulas sedes liquidas*, after every loose stool.
Ppt., *præparata*, prepared.
P. r. n., *pro re nata*, occasionally.
P. rat. ætat., *prô ratione ætatis*, according to the age.
Pug., *pugillus*, a pinch, a gripe between the thumb and the two first fingers.
Pulv. pulvis, *pulverizatus*, a powder, pulverized.
Q. l., *quantum lubet* } as much as you please.
Q. p., *quantum placet* }
Q. s., *quantum sufficiat*, as much as may suffice.
Quor., *quorum*, of which.
Q. V., *quantum vis*, as much as you will.
Red. in pulv., *redactus in pulverem*, reduced to powder.
Redig. in pulv., *redigatur in pulverem*, let it be reduced into powder
Reg. umbil., *regio umbilici*, the umbilical region.
Repet., *repetatur*, or *repetantur*, let it, or them, be repeated.
S. A., *secundum artem*, according to art.
Scat., *scatula*, a box.
S. N., *secundum naturam*, according to nature.
Semidr., *semidrachma*, half a drachm.
Semih., *semihora*, half an hour.

Sesunc., *sesuncia*, half an ounce.
Sesquih., *sesquihora*, an hour and a half.
Si n. val., *si non valeat*, if it does not answer.
Si op. sit, *si opus sit*, if it be necessary.
Si vir. perm., *si vires permittant*, if the strength allow it.
Signat., *signatura*, a label.
Sign. n. pr., *signetur nomine proprio*, let it be written upon, let it be signed with the proper name (not the trade name).
Sing., *singulorum*, of each.
S. S. S., *stratum super stratum*, layer upon layer.
Ss., *semi*, a half.
St., *stet*, let it stand; *stent*, let them stand.
Sub fin. coct., *sub finem coctionis*, towards the end of boiling, when the boiling is nearly finished.
Sum. tal., *sumat talem*, let the patient take one such as this.
Summ., *summitates*, the summits or tops.
Sum., *sume*, *sumat*, *sumatur*, *sumantur*, take, let him or her take, let it be taken, let them be taken.
S. V., *spiritus vini*, spirit of wine.
S. V. R., *spiritus vini rectificatus*, rectified spirit of wine.
S. V. T., *spiritus vini tenuis*, proof spirit.
Tabel., *tabella*, a lozenge.
Temp. dext., *tempori dextro*, to the right temple.
T. O., *tinctura opii*, tincture of opium.
T. O. C., *tinctura opii camphorata*, camphorated tincture of opium.
Tra., *tinctura*, tincture.
Ult. præscr., *ultimo præscriptus*, last prescribed.
V. O. S., *vitello ovi solutus*, dissolved in the yoke of an egg.
Vom. urg., *vomititione urgente*, the vomiting being troublesome.
V. S. B., *venæsectio brachii*, bleeding from the arm.
Zz., *zingiber*, ginger.

SYMBOLS USED IN PRESCRIPTIONS.

℞, *recipe*, take. This sign is really a modification of the symbol ♃, which was the old heathen invocation to Jupiter, imploring his blessing on the prescription.
gr., *granum*, a grain, the 60th part of a drachm.
℈, *scrupulus*, or *scrupulum*, a scruple = 20 grains troy.
ʒ, *drachma*, a drachm = 3 scruples.
℥, *uncia*, an ounce troy.
℔, *libra*, a pound weight.
♏, *minimum*, a minim, the 60th part of a fluidrachm.
fʒ, *fluidrachma*, a fluidrachm, the 8th part of a fluidounce.
f℥, *fluiduncia*, a fluidounce, the 20th part of a pint.
O, *octarius*, a pint, the 8th part of a gallon.
C, *congius*, a gallon.

SYMBOLS USED IN GERMAN PHARMACY.

ff, Sugar.	⏑ Spirit.
gg, Gum.	☽ Ammonia.
♁ Powder.	☿ Mercury.
▽ Water.	♁ Antimony.
⚬⚬ Oil.	♀ Sulphur.

THE PHARMACEUTICAL CALENDAR.

Containing a notice of Plants to be collected, and Operations to be performed, at particular periods of the year.

JANUARY AND FEBRUARY.

Taraxacum Root is sometimes collected in these months, for the preparation of extract; but it affords a watery juice, the inspissated extract of which is different from that made in September, October, and November, when the root possesses a greater amount of medicinal activity.

The following roots are considered by some persons to be in perfection in these months:—

Aconitum napellus.
Polygonum bistorta.
Potentilla tormentilla.
Rumex hydrolapathum.
Eryngium campestre.
Inula helenium.

Savine (*Juniperus sabina*) is in proper condition for making the ointment, and for distilling for the oil.

Few vegetables, excepting some cryptogamic plants, such as Boletus igniarius, Boletus laricis, and Cetraria islandica, are collected in these months.

Any operations which require a low temperature should be performed during the cold frosty weather which frequently prevails at this time: thus,

Oleine is obtained by separating the fluid from the congealed part of olive oil in cold weather.

The powdering of some gums, gum-resins, and other similar substances, such as *Scammony*, *Ammoniacum*, *Aloes*, &c., is more easily effected in cold than in warm weather.

MARCH.

The flowers and *leaves of Coltsfoot* (*Tussilago farfara*) are in season.

Buds of the Poplar, (*Populus nigra*,) in a fit state for the preparation of the ointment, (*Unguentum Populeum*;) also for tincture.

Almond flowers and *Mistletoe* may be collected.

Violets begin to flower.

APRIL.

Violet flowers, (*Viola odorata*,) for making syrup and for drying.
Asarabacca, (*Asarum Europœum*,)
Great Celandine, (*Chelidonium majus*,)
Scurvy-grass, (*Cochlearia officinalis*,) are in season during this and the next month.

Roots of Eryngo (*Eryngium campestre*) may be obtained for candying.

The entire plant of Taraxacum, (*Taraxacum dens-leonis*,) which is sometimes used medicinally, is collected in this and the next month.

MAY.

Roots of Horseradish, (*Cochlearia armoracia*,) for making the spirit, or distilled water.

Flowers of Heart's-ease (*Viola tricolor*) are occasionally used medicinally; they are more extensively employed as a substitute for *Viola odorata* in making syrup of violets; but this practice is very unjustifiable, and the substitution ought to be carefully guarded against.

Tops of Wormwood, (*Artemisia absinthium*,) and *Juniper*, (*Juniperus communis*,) may be collected. Also,
Cuckoo-flowers, (*Cardamine pratensis*,) and
Cowslips, (*Primula veris*.)

JUNE.

Tops of Wormwood, (*Artemisia absinthium*.)
Tops of Broom, (*Spartium scoparium*;) in season.

Wormwood is collected during this and two following months, for making extract, and for distilling oil.
Monkshood, (*Aconitum napellus*,)
Belladonna, (*Atropa belladonna*,)
Hemlock, (*Conium maculatum*,)
Foxglove, (*Digitalis purpurea*,)
Henbane, (*Hyoscyamus niger*,)

Lettuce, (*Lactuca sativa*, and *Lactuca virosa*,) to be obtained while in flower during this and next month, for the preparation of extract, and the preservation of the leaves.

Soap-wort, (*Saponaria officinalis*,) for making extract.

Elder-flowers, (*Sambucus niger*,) during this and part of next month, for preserving and for making elder-flower water.

Petals of Red Poppy (*Papaver rhœas*) should be collected in dry weather, for making the syrup.

Roses (*Rosa centifolia* and *Rosa gallica*) are in season during this and next month for making rose-water, and for drying the petals.

The leaves of Leopard's-bane, (*Arnica montana*.)

The leaves of Elder, (*Sambucus niger*,) for making elder ointment and green oil.

Rosemary, (*Rosmarinus officinalis*.)

Wake-Robin, or *Cuckoo-pint*, (*Arum maculatum*.)

JULY.

Many of the plants mentioned under last month are in season also during this.

Seeds of Colchicum (*Colchicum autumnale*) are collected in this, or the end of last month.

Capsules of White Poppy, (*Papaver somniferum*,) may be obtained in the green state, for making extract, which, prepared at this period, is preferred by some persons.

Roots of Tormentil, (*Potentilla tormentilla*,) common in dry, hilly pastures.

Peppermint, (*Mentha piperita.*)

Pennyroyal, (*Mentha pulegium.*)

Mint, (*Mentha viridis*,) supplied for making distilled waters.

Lavender flowers, (*Lavendula vera*,) in season.

Garlic, (*Alium sativum*,) comes into season this month.

The Cormi of Meadow Saffron (*Colchicum autumnale*) are sometimes dug up towards the latter end of the month.

The fruit of Squirting Cucumber (*Momordica elaterium*) is in a fit state for the preparation of *Elaterium* during the latter end of this, and part of next month.

Rosemary, (*Rosmarinus officinalis*,) for distilling.

Green Tobacco leaves, (*Nicotiana tabacum*,) for making *Tobacco ointment*, are to be obtained about this period of the year.

The following herbs may be obtained in the fresh state:—

Common Balm, (*Melissa officinalis.*)
Hyssop, (*Hyssopus officinalis.*)
Horehound, (*Marrubium vulgare.*)
Melilot, (*Melilotus cærulea.*)
Yarrow, (*Achillea millefolium.*)
Common Sorrel, (*Rumex acetosa.*)
Wood-sorrel, (*Oxalis acetosella.*)

AUGUST.

Flowers of Camomile (*Anthemis nobilis*) are gathered during this month and next. The wild camomile is more active than the cultivated. There is a distinct variety that yields a blue-coloured oil.

The Cormi of Meadow-Saffron (*Colchicum autumnale*) are in perfection during this and next month.

The Squirting Cucumber (*Momordica elaterium*) is generally in a better condition for yielding elaterium in this than in the previous month. The pepos should be gathered after some of the most forward have discharged the seed. They are generally gathered too early.

Green Tobacco leaves (*Nicotiana tabacum*) may still be obtained. The preparation of the ointment should not be neglected.

Poppy Capsules (*Papaver somniferum*) are becoming ripe. They are more active if they are gathered before they are quite ripe.

Stramonium, (*Datura stramonium.*) The herb is now fit for collecting.

White Briony-root, (*Bryonia dioica.*)

Black Briony-root, (*Tamus communis*).

Winter Cherry, (*Physalis alkekengi.*)

Pomegranate, or *Balaustine flowers*, (*Punica granatum*,) in season.

The Hop (*Humulus lupulus*) grows wild in many parts of the country, and may be collected at this period for medicinal use. Commercial hops are exposed to the vapour of sulphur, during the drying process to which they are submitted, by which the flavour is somewhat injured.

The fruit of the Mulberry (*Morus nigra*) is coming to maturity. The ripe fruit should be used for the syrup.

The fruit of Barberry, (*Berberis vulgaris*,) ripe. When prepared as a conserve, it forms, with water, an agreeable and refreshing beverage in fevers.

Root of Marsh-mallow (*Althæa officinalis*) is in the best condition for yielding the mucilage on which its medicinal efficacy depends.

Root of Angelica (*Archangelica officinalis*) may be obtained for candying.

The fruit of Buckthorn, (*Rhamnus catharticus*,) found in woods and hedges. The unripe berries are used as a yellow dye. The juice of the ripe fruit, when inspissated, forms sap-green; it also enters into the composition of the syrup of buckthorn. These preparations should be made about this time. It is often later than this before the fruit ripens.

SEPTEMBER.

Hips, fruit of Dog-rose, (*Rosa canina*,) collected from the hedges, for making Conserve of Hips.

Elder-berries, (*Sambucus niger*,) collected from the hedges for making Elder Rob.

Buckthorn-berries (*Rhamnus catharticus*) may also be collected now.

This is the season for collecting the following roots:—

Roots of *Aconitum napellus.*
„ *Archangelica officinalis.*
„ *Arnica montana.*
„ *Althæa officinalis.*
„ *Glycyrrhiza glabra.*
„ *Helleborus niger.*
„ *Polygonum bistorta.*
„ *Rumex aquatica.*
„ *Valeriana officinalis.*

The Root of Taraxacum (*Taraxacum dens-leonis*) is now filled with a white milky juice, which it yields in abundance, and which, when inspissated, forms a bitter and efficacious extract. The extract should be made during this and following month.

The Rhizomes of Male fern, (*Aspidium filix mas*,)
„ *Sweet flag*, (*Acorus calamus*,)
„ *Orris*, (*Iris florentina*,)
„ *White Hellebore*, (*Veratrum album*,)
may be collected; also,
The Cormi of indigenous Salep, (*Orchis mascula.*)

OCTOBER.

Some of the fruits already noticed are still in season.

The fruit of the Juniper (*Juniperus communis*) may be collected.

This is the month for collecting most barks.

Saffron, the stamens of *Crocus sativus*, is gathered during this month.

Quince seeds (*Cydonia vulgaris*) may be got at some of the fruit-shops.

Eringo root (*Eryngium campestre*) is again in season for candying.

Taraxacum Root is still in a good state for making extract.

The bark of Mezereon-root (*Daphne mezereum*) may be collected. It is not yet too late for *Buckthorn-berries.*

NOVEMBER AND DECEMBER.

The tops of Savine (*Juniperus sabina*) may be got for making the ointment.

The stems of Woody Nightshade (*Solanum dulcamara*) are collected.

Liquorice Root, (*Glycyrrhiza glabra*,) in season.

ANIMALS YIELDING PRODUCTS

EMPLOYED IN

MEDICINE, DOMESTIC ECONOMY, AND THE ARTS.

CLASSIFICATION OF ANIMALS.

The following arrangement of the animal kingdom was adopted by Cuvier, whose system has been followed, although in some cases with modifications, by most subsequent writers on this branch of natural history.

GENERAL DISTRIBUTION OF THE ANIMAL KINGDOM INTO FOUR GREAT DIVISIONS.

If, on entering upon a consideration of the animal kingdom, we divest ourselves of previous opinions, founded on the divisions formerly recognized, and direct our attention merely to the organization and nature of animals, and not to their size, their use, the greater or less extent of knowledge which we have of them, nor to any of the other accessory circumstances connected with them, we shall find that there are four principal or leading forms—four general plans, according to which all animals seem to have been modelled, and the ulterior divisions of which, under whatever title naturalists may think fit to characterize them, are but slight modifications, founded on the development or addition of some parts, which occasion no essential change in the nature of the plan.

I. Animalia Vertebrata. *Vertebrate Animals.* In this, the first of these forms, which is that of man, and the animals most closely resembling him, the brain and principal trunk of the nervous system are enclosed in a bony envelope, consisting of the cranium and vertebræ; to the sides of this middle column are attached the ribs and the bones of the extremities, which constitute the frame-work of the body; the muscles, in general, cover the bones, which they bring into action; and the viscera are enclosed within the head and the trunk.

Animals of this form all have red blood; a muscular heart; a mouth with two jaws placed the one above or anteriorly to the other; distinct organs for sight, hearing, smell, and taste, all placed in the cavities of the face; never more than four extremities; sexes always distinct; and a similar distribution of the medullary masses and of the principal branches of the nervous system.

On examining more closely each of the parts of this great series of animals, we invariably find some analogy, even in the species most remote from each other, and we can trace the gradations of one and the same plan from man even to the least of the fishes.

II. Animalia Mollusca. *Molluscous Animals.* In this, the second form, there is no skeleton; the muscles are merely attached to the skin, which forms a soft envelope, capable of contracting in different directions; in which stony laminæ, called shells, are produced in several species, the position and production of which are analogous to those of the corpus mucosum: the nervous system is, together with the viscera, in this general envelope, and is constituted of several scattered masses, united by nervous filaments, and the chief of which, placed on the œsophagus, is called the brain. Of the four proper senses, we only distinguish the organs of that of taste and of that of vision; even these latter are frequently wanting. Only one family exhibits organs of hearing. There is always a complete system of circulation, and of the particular organs for respiration. Those of digestion and of the secretions are nearly as complex as in the vertebrate animals.

III. Animalia Articulata. *Articulated Animals.* This, the third form, is that observed in insects, worms, &c. The nervous system consists of two long cords, extending along the abdomen, swelling out at different intervals into knots or ganglions. The first of these knots, placed above the œsophagus, and called the brain, is scarcely larger than those placed along the abdomen, with which it communicates by filaments which encompass the œsophagus like a necklace. The envelope of the trunk is divided by transverse folds into a certain number of rings, the integuments of which are sometimes hard, sometimes soft, and the muscles are always attached to the interior. The trunk frequently carries articulated members at its sides; frequently, too, it is destitute of them.

It is among these that we observe the transition from the circulation in short vessels to nutrition by imbibition; and the corresponding transition from the respiration in the circumscribed organs, to that which takes place by tracheæ and air-vessels diffused throughout the entire body. The organs of taste and of sight are most distinct in them; only one family exhibits those of hearing. The jaws, when they have any, are always lateral.

IV. Animalia Radiata. *Radiated Animals.* In all the preceding classes of animals, the organs of motion and of the senses are arranged symmetrically on two sides of an axis. There is a posterior aspect, as well as an anterior, both dissimilar. In the animals of this division they are like radii around a centre, and this is true even when there are but two series, for then the two aspects are similar. They approximate to the homogeneousness of plants; we see in them neither a distinct nervous system, nor organs of particular senses; in some we scarcely perceive traces of a circulation; their respiratory organs are almost always on the surface of their body; most of them have but a short sac for the entire intestine, and the lowest families present but a sort of homogeneous pulp, possessing moving and sensitive properties.

The following table exhibits the distribution of the animal kingdom into the foregoing four great divisions, and these latter into nineteen classes :—

	General Forms.	Classes.	
Animals	I. Vertebrate	Mammalia (*Mammals*)	1
		Aves (*Birds*)	2
		Reptilia (*Reptiles*)	3
		Pisces (*Fishes*)	4
	II. Molluscous	Cephalopoda	5
		Pteropoda	6
		Gasteropoda	7
		Acephala	8
		Bracheopoda	9
		Cirrhopoda	10
	III. Articulated	Annelida	11
		Crustacea	12
		Arachnida	13
		Insecta	14
	IV. Radiated or Zoophyte	Echinodermata	15
		Intestinalia	16
		Acalepha	17
		Polypa	18
		Infusoria	19

First Division of the Animal Kingdom.

VERTEBRATA. (Cuv.)—VERTEBRATE ANIMALS.

Myelencephala. (Owen.) *Spinecerebrata.* (Grant.)

CLASS I. MAMMALIA.

The Mammalia have a heart with two auricles and two ventricles. They have a perfect and complete circulation of the blood; that is to say, the whole of the blood which returns from the extremities of the body passes through the lung, before returning to nourish them. The females nourish their young for some time after birth by means of organs called *mammæ*. They have in general four extremities. (The cetacea have but the rudiments of the posterior extremities.)

The number of vertebræ varies; there are three kinds,—the *cervical*, the *dorsal*, and the *lumbar*. Man, who is comprised in this class, has the body naturally vertical, by which he is distinguished from the others, which are quadrupeds, and covered with hair, or cetacea.

The mammalia are divided into nine orders, and these into families, genera, sub-genera, and species. The following is a table of the orders:—

				Orders.
Class 1st. Mammalia.	Having nails, or unguiculated.	Three sorts of teeth—*molar, canine, incisor*	Thumb free.	1. Bimana.
				2. Quadrumana.
			Without thumb, or fingers united.	3. Carnaria.
				4. Marsupialia.
		Less than three kinds of teeth.	Absence of canine teeth.	5. Rodentia.
			Absence of incisors.	6. Edentata.
	Having hoofs, or ungulated.	Not ruminant.	.. ..	7. Pachydermata.
		Ruminant.	.. ..	8. Ruminantia.
	Having the extremities obliterated.		.. ..	9. Cetacea.

Order 1. BIMANA.

Homo. *Man.* This is the only genus in this order. In the present day, the only product obtained from the human body for use in medicine is urea, which is sometimes procured from human urine. In the old Pharmacopœias, many other products or parts were included in the Materia Medica. The Lond. Pharm., 1639, orders *the "os triquetrum" of the human skull;—human fat;—human excrement;—human milk;—human blood;*—and *human urine.* The Lond. Pharm., 1650—*the skull of a man who has suffered a violent death,* and *mummy,* which was a favourite remedy. The Lond. Pharm., 1677,—*calculus from the human bladder.* Other parts were used in medicine about the period of the above dates, such as *the parings of the nails,* which were esteemed a good emetic; *the wax of the ears,* and *the moss growing on a dead man's skull,* were also used.

Order 2. QUADRUMANA.

Animals of this order are distinguished by having four extremities, each of which is furnished with long flexible fingers, and a thumb capable of being opposed to the fingers, in the same manner as in the human hand. Hence the name of the order.

Simia. *The Monkey.* One of the Bezoars, formerly esteemed in medicine, was said to be obtained from the intestine of a species of monkey.

Order 3. CARNARIA (Carnassiers, *Cuv.*)

The animals included in this order possess, like man and the quadrumana, three kinds of teeth, but have no thumb capable of being opposed to the fore-fingers.

They all live on animal substances, and so much the more exclusively as their molar teeth are more cutting. Those which have them either entirely or in part tuberculated, consume more or less of vegetable substances. The articulation of their lower jaw admits of no lateral or horizontal motion; the mouth can merely open and shut.

There are three families of the Carnassiers; viz., the *Cheiroptera*. *Insectivora*, and *Carnivora*.

The CHEIROPTERA have some affinity to the quadrumana, by having the mammæ on the chest. Their distinctive character consists in a fold of skin, which, commencing at the sides of the neck, extends between their fore-feet and their fingers; this sustains them in the air, and even allows those to fly that have the hands sufficiently developed. —*Ex.* The *Vespertilio* or *Bat.*

The INSECTIVORA, like the Cheiroptera, have the molar teeth set with conical points; they generally live a nocturnal and subterraneous life. They have not, like bats, lateral membranes, and still they never want clavicles; their feet are short; their mammæ are placed beneath the abdomen; none of them have a cæcum. They vary in the position and relative properties of their incisor and canine teeth.—*Ex.* The *Erinaceus*, or *Hedgehog.*

The CARNIVORA. In the two preceding families, the comparative weakness of the animals, and the presence of conical tubercles on their molar teeth, oblige them to confine their carnivorous propensities to the destruction of insects. It is in the Carnivora alone that the sanguinary appetite is combined with the strength necessary to gratify it. This family is characterized by four large and long canine teeth, separated one from the other, between which there are six incisors in each jaw.

This family has been subdivided into three tribes:—

1st. *Plantigrade*, comprising the Bear, Badger, &c.
2nd. *Digitigrade*, comprising the Dog, Cat, Tiger, &c.
3rd. *Amphibious*, comprising the Phoca, &c.

FAMILY 1. Cheiroptera. (χειρ, hand, and πτερον, wing.)

VESPERTILIO. (Linn.) *The Bat.*

Hab. Dark places in general; they fly abroad in the evening.

Food. Gnats, flies, flesh, &c.

Use. The flesh of the animal is said to have been used by Galen against the gout. Avicenna employed an oil obtained from it in the same disease.

FAMILY 2. Insectivora.

ERINACEUS EUROPÆUS. (Linn.) *The Hedgehog.*

Dental Formula.—Incisors $\frac{6}{2}$; canines 0; molars $\frac{7-7}{7-7} = 36$.

Hab. Everywhere, except Crete, according to Pliny.

Food. Various fruits, as well as insects.

Use. The *adeps* is mentioned as a simple in some of the old Pharmacopœias. This was considered useful in diarrhœa.

TALPA EUROPÆA. (Linn.) *The Mole.*

Hab. Almost everywhere; they lead a subterraneous life.

Food. Worms, roots of herbs, &c.

Use. The excrements of the mole, mixed with honey, were supposed useful in scrofulous ulcers. The earth cast up with the head "helps wens and imposthumes." "The ashes of a mole taken inwardly with beer or wine, help running gout."

FAMILY 3. Carnivora. *Tribe* 1. *Plantigrade.*

URSUS AMERICANUS. (Pallas.) *The American Black Bear. The Sass* of the Chippewayan Indians.

Hab. Every wooded district of the American continent, from the Atlantic to the Pacific, and from Carolina to the shores of the Arctic Sea.

Food, habits, &c. Its chief food seems to be berries of different kinds—also roots, insects, fish, eggs, birds, and quadrupeds; it, however, prefers vegetable diet. It generally selects a spot for its den under a fallen tree. Dr. Richardson allots sixteen weeks as the probable time of gestation to the American Black Bear. It is, however, so characteristic for the female to conceal itself, that little can be known with certainty on this point, with respect to either the brown or black bear. "No man, Christian or Indian," according to Brickell, "ever killed a she-bear with young." Aristotle made the same remark long since, in Chap. xxx., Book vi. Κυουσαν δε αρκτον εργον εστι λαβειν.

Use. The skin of the black bear was formerly sold at from twenty to forty guineas; it now hardly fetches more than so many shillings. The soft fat obtained from different species of the bear has long been celebrated as an application for promoting the growth and preservation of the human hair.

URSUS ARCTOS. (Linn.) *The Brown Bear.* Αρκτος, of Aristotle.

Dental Formula.—Incisors $\frac{6}{6}$; canines $\frac{1-1}{1-1}$; molars $\frac{6-6}{7-7} = 42$.

Hab. Mountainous districts of Europe, from very high latitudes in the north, (Arctic Circle,) to the Alps and Pyrenees in the south; Siberia, Kamschatka, and even Japan to the eastward, and a portion of the northern regions of America, Africa, and the Moluccas.

Food, habits, &c. The brown bear is a solitary animal. Its retreat, during hybernation, is the natural hollow of a tree or some cavern; or, for want of these, some habitation constructed by the animal itself. The bear was at one time common in the British isles. The Laplanders hold this bear in great veneration. Seven months is the period of gestation.

Use. To the Kamschatkans this bear seems to have given the necessaries and even the comforts of life. The skin forms their beds and coverlets, bonnets and gloves. The flesh and fat are dainties; of the intestines they make covers for their faces, to protect them from the glare of the sun in spring, and use them for glass over their windows.

URSUS GULO. (Linn.) *Common Glutton*, or *Wolverene.*

Dental Formula.—Incisors $\frac{6}{6}$; canines $\frac{1-1}{1-1}$; molars $\frac{4-4}{5-5}$ or $\frac{5-5}{6-6} =$ 34 or 38.

Hab. The northern part of the American continent—Lapland. According to Lesson, the animal inhabits a complete circle round the North Pole in Europe and Asia, as well as America.

Food, &c. It feeds chiefly, according to Dr. Richardson, on the carcases of beasts which have been killed by accident. The wolverenes

are represented as extremely mischievous, doing more injury to the small fur-trade than all other animals conjointly. They follow the marten-hunter's path round a line of traps, extending forty, fifty, or sixty miles, and render the whole unserviceable, merely to come at the baits, which are generally the head of a partridge, or a bit of dried venison.

Use. Chiefly valued for their furs.

URSUS MELES. (Storr.) *The Badger.*

Dental Formula.—Incisors $\frac{6}{6}$; canines $\frac{1-1}{1-1}$; molars $\frac{4-4}{6-6} = 36$.

Hab. The whole of Europe, Northern and Central Asia, and North America.

Food, habits, &c. The badgers sleep all day at the bottom of their burrows, and move about at night in search of food, which consists of rabbits, game, lambs, roots, and fallen fruits. Their habits are in general solitary.

Use. Their flesh is relished as an article of food.

It may be well to remark, that the *Meles* of Cuvier, a genus of plantigrade carnivorous animals, included by Linnæus among the bears, has been, as well as the gluttons, racoons, &c., separated from that group by succeeding naturalists.

FAMILY 3. Carnivora. *Tribe* 2. *Digitigrade.*

CANIS.

Dental Formula.—Incisors $\frac{6}{6}$; canines $\frac{1-1}{1-1}$; molars $\frac{6-6}{7-7} = 42$.

According to M. F. Cuvier, dogs in general have forty-nine teeth; viz., six incisors, two canines, three false molars, one carnassier, and two tubercular teeth in the upper jaw; and six incisors, two canines, three false molars, one carnassier, and two tubercular teeth in the lower jaw.

Fore-feet with five toes; hind-feet with four toes; claws not retractile.

CANIS FAMILIARIS. (Linn.) *The Domestic Dog.*

Hab. In all countries.

Food. Chiefly flesh.

Use. In the editions of the Lond. Pharm. of 1618, 1650, and 1677, the adeps, as also the excrement (*album græcum*) of this animal were ordered as articles of the Materia Medica. Various and extraordinary virtues were ascribed to the different parts of the dog; a young puppy applied to the bowels was considered capable of affording relief. The fat was supposed good in paralysis.

CANIS LUPUS. (Linn.) *The Wolf.*

Hab. It may be found from Egypt even to Lapland, and it seems to have passed into America.

Food. Chiefly the flesh of animals. This is perhaps the most voracious of all the carnivora.

Uses. In the Lond. Pharm., 1618, the liver and intestines of the wolf are enumerated among the *Medicamenta Simplicia*, and the same parts, as well as the *adeps*, in the Lond. Pharm of 1650. The *adeps*

was employed as an ointment among other articular remedies. Pliny mentions it as an application for modifying the uterus, and also as being useful in ophthalmia tarsi. The *liver* was recommended in hepatic diseases. Avicenna employed it in indurated liver.

Canis vulpes. (Linn.) *The Fox.*

Hab. In Russia, the Alps, England, &c., from Sweden, in fact, to Egypt. The animal is also an inhabitant of the new continent of America.

Food. Hens, geese, hares, &c. &c. &c.

Uses. The *adeps* has been mentioned among the simples in some of the Pharmacopœias. It appears to have had the character of a resolvent, antispasmodic, and anodyne.

Felis.

Dental Formula.—Incisors $\frac{6}{6}$; canines $\frac{1-1}{1-1}$; molars $\frac{4-4}{3-3} = 30$.

(The formation of these teeth is beautifully shown in four preparations in the Museum of the R. C. Surgeons, London; see Nos. 329, 330, 331, 332; Catalogue, Physiological Series.—Gallery, V. i., p. 93.)

Felis catus. (Linn.) *The Cat.*

Hab. In its original state of wildness an inhabitant of the forests of Europe. In its domesticated state, in which its appearance becomes much modified, it is to be found in almost all countries.

Food. Flesh, in general, and fish.

Uses. Various medicinal properties have been assigned to the parts of this animal. The flesh, it was supposed, "helpeth the pain of hæmorrhoids, heateth the reines, and helpeth the pain of the back."—*Ursin.* "The fat of a wild cat is of like nature with the flesh."—*Sylvius.* "The ashes of the head of a black cat, burned in a glazed vessel, and put into the eye with a quill, helpe the haw, wert, and web in the eye. And if there be heat in the night, two or three oak-leaves applied wet in water help the same."—*Galen.* "The liver burned and drunk helpeth the stone."—*Pliny.*

Felis leo. (Linn.) *The Lion.*

Hab. This animal, which was formerly to be found in several parts of Europe, Asia, and Africa, is now almost entirely confined to Africa, and some of the adjoining parts of Asia.

Food. Flesh in general; more especially, that of men, beasts, and birds.

Use. We find the fat of the lion enumerated among the simples in the Lond. Pharm. of 1618. Various, and many of them very fanciful, virtues, were assigned to it by the old physicians. According to Galen, lion's fat resists poison; used with wine, it expels evil beasts, and the smell drives away serpents. According to Pliny, mixed with oil of roses, it preserves and whitens the skin of the face. Injected in the form of a clyster, it relieves dysentery.

Felis lynx. (Temm.) *The Lynx.*

Hab. The *Felis lynx*, originally an inhabitant of the temperate parts of Europe, has almost entirely disappeared from the populous countries

of that quarter of the globe. It is still to be found in the Pyrenees, the mountains in the kingdom of Naples, and, according to some, in parts of Africa.

Food. Flesh of beasts, as cats, &c.

Use. The *ungula*, or hoof of the animal, is enumerated among the simples of the Lond. Pharm. of 1618. It was supposed to possess certain virtues in the cure of the "fallen sickness," and in the treatment of nervous and spasmodic diseases in general.

FELIS PARDUS. (Linn.) *The Leopard.*

Hab. Africa and some parts of Asia.

Food. Flesh, as of dogs, apes, and lambs.

Use. The *adeps* of this animal is among the simples of the Lond. Pharm. of 1618. It was supposed to be beneficial in paralysis, and nervous affections of the heart. Mixed with oil of bays, it was "found useful in ringworm."

FELIS TIGRIS. *The Tiger.*

Hab. Chiefly Asia.

Food. The flesh of animals, chiefly that of goats.

Use. The Indians are said to use the buttocks as meat.

LUTRA COMMUNIS. (MUSTELA LUTRA. Linn.) *The Common Otter.*

Dental Formula.—Incisors $\frac{6}{6}$; canines $\frac{1-1}{1-1}$; molars $\frac{5-5}{5-5} = 36$.

Hab. In various parts of Europe; they inhabit the rivers, on the banks of which they are frequently seen.

Food. Fishes, tops of plants, fruits, and barks.

Use. Various and absurd uses, not worth noticing in this place, have been assigned to them.

MUSTELA FURO. (Binn.) *The Ferret.*

Hab. Almost everywhere.

Food. Mice, moles, serpents, hares, eggs.

Use. The blood, drunk in wine, was considered good against the stings of scorpions, according to Dioscorides. According to Galen, the *liver* "helps the epilepsy." "The *lungs* help diseases of the lungs."

VIVERRA. (Cuv.)

Generic characters. A deep pouch situated between the anus and the sexual organs, divided into two bags, filled with an abundant concrete secretion of the consistence of *pomade*, exhaling a strong musky odour, secreted by glands which surround the pouch. Pupil of the eye round during the day. Claws only half retractile.

Dental Formula.—Incisors $\frac{6-6}{6-6}$; canines $\frac{1-1}{1-1}$; molars $\frac{6-6}{4-4} = 48$.

Of the genus Viverra there are two species commonly described, the *Viverra civetta*, or African Civet Cat, and the *Viverra zibetha*, the Asiatic Zibet Cat.

VIVERRA CIVETTA. (Linn.) *The Civet.*

Ash-coloured, irregularly barred and spotted with black; the tail less than the body, black towards the end, with four or five rings near

its base; two black bands surrounding the throat, and one surrounding the face; a mane along the whole length of the spine and tail that bristles up at the will of the animal.

Habitat. The dry and mountainous regions of Africa from 31° N. to 25° S. lat.

Habits, &c. In its habits the civet approaches rather near to the foxes and smaller cats. In a state of captivity, it becomes in a degree tame, but never familiar, and is dangerous to handle. The young are fed on farinaceous food, with a little flesh or fish, and the old on raw flesh. Many of them are kept in North Africa for the sake of the perfume, which bears the name of the animal, and brings a high price. The secretion of *Civet* is favoured by scraping the pouch with an iron spatula about twice a week. About a dram is obtained each time.

VIVERRA ZIBETHA. (Linn.) *The Zibet.*

Ash-coloured, spotted with black; black half rings on the white tail, and black bands on the sides of the neck.

Habitat. Between 31° N. lat., and 9° S. lat., in Hindostan, Malabar, Ceylon, Bengal, Siam, &c. &c., to the Philippine islands, and the island of Buro. From the Philippines it is said to have been carried to America; it is found in the wild state in Guatimala, Mexico, Nicaragua, Cuba, &c.

Habits, &c. Similar to those of the African species, except that, according to Müller, its bite is dangerous, and it burrows in the ground like the rabbit.

The specific names *civetta* and *zibetha* are derived from the Arabic. The substance obtained from the *Rasse** agrees with the *civet* afforded by the *Viverra civetta* and *zibetha* in colour, consistence, and odour. It is a very favourite perfume among the Javanese, and is applied both to their dresses, and, by means of various unguents and mixtures of flowers, to their persons. Even the apartments and the furniture of the natives of rank are generally scented with it to such a degree as to be offensive to Europeans.

As sub-genera of the Viverra, Cuvier mentions the Genetta and Paradoxurus.

VIVERRA GENETTA. (Linn.) *Genet.*

Sub-generic character. Odoriferous pouches reduced to a slight depression, formed by the projection of the glands, and without any perceptible excretion, although the odour is manifest. The pupil has a vertical slit, and the claws are retractile, as in the cats.

Description. Gray, spotted with small black or brown patches, sometimes round, sometimes oblong; the tail, which is as long as the body, is ringed with black and white, the black rings being to the

* Dr. Horsfield, in his *Zoological Researches in Java*, figures and describes two Javanese *Viverræ*, viz., *Viverra Musanga*, var. *Javanica*, and *Viverra rasse*. The former of these very much infests the coffee-plantations in Java, and from this circumstance it is called the coffee-rat in several parts of that island. These injurious effects in the coffee-plantations are fully counterbalanced by its propagating the plant in various parts of the forests, and particularly in the declivities of the fertile hills. The same writer gives a description of the *V. rasse* and of the *V. zibetha*; which latter is called by the Malays *Tanggalung*.

number of nine or eleven. White spots on the eyebrow, cheek, and on each side of the end of the nose.

Hab. From the south of France to the Cape of Good Hope. It prefers lowlands, the banks of rivers, and the neighbourhood of springs.

PARADOXURUS. (Fr. Cuv.)

Sub-generic character, generally that of the Civets and Genets. Tail capable of being rolled from above downwards to its base, but not prehensile. Toes five, nearly palmated; sole of foot tuburculous. Eyes with pupils slit longitudinally. No pouch.

Dental Formula.—Incisors $\frac{6}{6}$; canines $\frac{1-1}{1-1}$; molars $\frac{6-6}{6-6} = 40$.

FAMILY 3. Carnivora. *Tribe* 3. *Amphibious.*

PHOCA COMMUNIS. (*Phoca vitulina*, Linn.) *Sea-calf, Sea-dog, or Seal.*

Hab. Both sea and land. This species, according to some authors, inhabits the Caspian Sea, and the extensive fresh-water lakes of Russia and Siberia.

Food. Fish.

Use. The flesh was supposed to be good in epileptic diseases. The fat was used, both internally and externally, in female diseases. The flesh is considered delicate. The skin, fur, and oil, are used.

PHOCA JUBATA. (Gm.) *Sea-lion* of Steller, &c.

Flesh of the young, nutritious. Skin used for tanning.

PHOCA LEONINA. (Linn.) *Sea-lion* of Anson; *Sea-elephant, or Sea-horse* of the English. Yields blubber.

ORDER 4. MARSUPIALIA. *Marsupial Animals.*

The marsupial animals (from *marsupium*, a pouch) bear some resemblance to the carnaria; but are distinguished from the latter, as well as from the other mammals, by the existence of a pouch formed by the skin of the abdomen in the female, which serves to contain the young ones, which are born when they are but very imperfectly formed, until they are developed to the degree at which animals are usually born. Linnæus had given them the name of *didelphi*, a term signifying a double uterus, (or rather *twin brothers.*) δις, twice, and δελφος, uterus, or αδελφος, a brother. This order comprehends the different species of opossum, kangaroo, &c.; but none of these animals yield anything to medicine.

ORDER 5. RODENTIA. (Cuv.) *Rodents.*

Essential characters. Two large incisors in each jaw, separated from the molars by a vacant space. No canine teeth. Molars with flat crowns, or blunt tubercles. Extremities, the posterior longest, terminated by unguiculated toes, the number varying according to the species. Mammæ variable in number. Stomach empty. Intestines very long. When speaking of this order, Cuvier remarks that two

great incisors in each jaw could hardly seize a living prey, nor rend flesh; they could not even eat aliments; but they might serve for reducing them, by continued labour, into fine molecules—in a word, for gnawing them, whence the term *Rodents*, or *gnawers* (*rodo*, to gnaw). With these weapons they attack the hardest vegetable productions, and frequently feed on wood and bark. In order to effect this, these incisors have enamel only in front, so that their posterior border being more worn away than their anterior edge, they are always kept set like a chisel. The lower jaw is articulated by a longitudinal condyle, so as to have no horizontal movement, except from behind forwards, and *vice versâ*. The molars consequently have flat crowns, the enamelled eminences of which are always transversal, so as to be in opposition to the horizontal movements of the jaw. The genera in which these eminences are simple lines, and which have the crown very flat, are more exclusively frugivorous.

CASTOR FIBER. (Linn.) *The Beaver.*

Dental Formula.—Incisors $\frac{1-1}{1-1}$; molars $\frac{4-4}{4-4}$ = 20.

This animal is distinguished from all the rest of the order (Rodentia) by a broad horizontally flattened tail, which is nearly oval and covered with scales. Five toes on each of the feet; those of the hinder ones only are webbed, the webs extending beyond the roots of the nails.

Hab. Europe and Asia. The inhabitants of the former are *burrowers*, the latter *builders*.

Food. Bark of trees, fish and fruits.

Use. Castoreum, a substance contained in two sacs situated near the anus of the animal, has been used in medicine since the time of Hippocrates. It was considered to exercise a peculiar influence on the internal functions. The pods are said to be prepared by first boiling them in a ley of wood-ashes, then drying and smoking them over a fire into which birch bark has been put.

There are two kinds of *Castor* or *Castoreum*, distinguished in commerce as *Russian* and *American*. The former is considered the best, and is much the most expensive.

Russian Castor usually occurs in smaller sacs than the American. The castoreum contained in the sacs is somewhat pulverulent, and of a dull, ash-grey colour. It occasions effervescence when added to hydrochloric acid.

American Castor is met with in sacs of various sizes, and which are sometimes very large. Two sacs are usually united together by a ligament. The castoreum has a resinous appearance, and frequently a bright yellow or red colour.

The *fat* of the castor is enumerated among the simples of the Lond. Pharm. of 1618. The fur has been valued for its application in the manufacture of hats.

HYSTRIX CRISTATA. (Linn.) *The Porcupine.*

Hab. Italy, France, and Spain; also Africa and India.

Food. Various kinds of fruit and vegetables.

Use. The *flesh* was considered beneficial in various diseases, as

leprosy; being salted, it was said to cure dropsy and incontinence of urine.

Lepus.

Mr. Swainson defines the genus *Lepus* thus: cutting teeth $\frac{4}{2}$, the upper in pairs, two in front, large and grooved, and two smaller behind; lower teeth square: grinders $\frac{6-6}{5-5}$, composed of two soldered vertical plates; a sixth very small in the upper jaw; soles of feet hairy; anterior feet with five toes; posterior with four; tail very short, turned upwards.

The sub-family, *Leporina*, seems to be strictly natural, consisting entirely of those species, and they are not few, which are usually known by the name of hares and rabbits.

Dental Formula.—Incisors $\frac{4}{2}$; molars $\frac{6-6}{5-} = 28$.

The common hare, or Lepus timidus, which is generally considered as the type, is the Λαγως (Lagus) of the Greeks.

Lepus cuniculus. (Linn.) *The Rabbit.*

Hab. Originally a native of Spain, but may now be found all over Europe.

Food. Various plants and herbs.

Use. The *fat* of the rabbit is among the simples of the London Pharm. 1618.

Lepus timidus. (Linn.) *The Hare.*

Hab. In most countries of Europe; also in various parts of Africa.

Food. Grass, corn, and the like.

Use. Several parts of the hare, as the *adeps*, the *astragalus*, the *blood*, &c., are enumerated among the simples in the Lond. Pharm. of 1618. Thus the brain of the hare, when roasted, was said to "help trembling, to make children breed teeth easily, their gums being rubbed with it." The small bones in the fore-feet of the hare, when pulverized, and drunk in wine, were considered powerfully diuretic.

Mus musculus. (Linn.) *The Mouse.*

Hab. Almost everywhere, in houses, barns, &c.

Food. Bread, cheese, corn, tallow, &c. &c.

Use. The *adeps* and *excrement* of the mouse are mentioned among the simples of the Lond. Pharm. of 1618. Various virtues were assigned to the flesh of the mouse when eaten.

Sciurus vulgaris. (Linn.) *The Squirrel.*

Hab. Almost in all countries.

Food. Apples, chestnuts, walnuts, &c.

Use. The fat was recommended by Galen in earache.

Order 6. EDENTATA.

This order of animals is characterised by the absence of teeth in the front jaw. Claws large. They possess more strength than agility. Cuvier divides them into three tribes.

1st. The *Tardigrades.* Example, *the Sloths.* (*Bradypus*, Linn.)

2nd. The *Armadillos* (*Dasypus*, Linn.). *Chlamyphorus* comes under this tribe, as well as *Orycteropus*, *Myrmecophaga* (*Ant-eater*), and the *Pangolins* (*Manis*, Linn.).

3rd. The *Monotremes*. [*Echidna*, *Ornithorynchus*, &c.]

ORNITHORYNCHUS PARADOXUS. (Blum.) *The Common Ornithorynchus*, or *Water-mole*.

Dental Formula.—Incisors $\frac{0}{0}$; canines $\frac{0-0}{0-0}$; molars $\frac{2-2}{2-2} = 8$.

Description. Molar teeth fixed only in the gum; body covered with hairs, anteriorly terminated by a broad, depressed, duck-like beak; legs four, pentadactyle, palmated, with a spur on the hind ones in the male.

Hab. The rivers and marshes on the eastern coast of New Holland, and in the vicinity of Port Jackson.

This animal is remarkable for having the bill of a duck, and the limbs of a quadruped. The male has a spur, resembling that of the domestic cock, attached to the hinder legs, with which dangerous and even fatal wounds are inflicted.

ORDER 7. PACHYDERMATA. (Cuv.) *Pachydermes.*

(Thick-skinned—παχυς, thick, and δερμα, hide.)

Essential characters. Three kinds of *teeth*. Four *extremities*, the toes varying in number, and furnished with strong *nails* or *hoofs*. No *clavicles*.

This order is divided into three families: 1. The *Proboscidiana*, or those furnished with a proboscis, including the elephant, and some fossil animals. 2. The *common Pachydermata*, including all the rest except the horse, which belongs to Family 3. *Solipeda*, or solid-footed.

FAMILY 1. Proboscidiana.

The only living type of this order is the

ELEPHAS. (Linn.) *The Elephant.*

The Elephants of the present day are only found in the torrid zone of the eastern continent, where hitherto only two species have been ascertained, scil. *Elephas Indicus*, (Cuv.,) the *Indian Elephant;* and *E. Africanus*, (Cuv.,) the *African Elephant.*

Dental Formulæ. African Elephant, incisors $\frac{2}{0}$; molars $\frac{4}{4} = 10$.
Asiatic Elephant, incisors $\frac{2}{0}$; molars $\frac{2}{2} = 6$.

Food. Herbs, leaves of trees, various kinds of fruits, &c.

Use. Elephant's tooth was once recommended as an astringent in leucorrhœa; it was also given in yellow jaundice, and for the purpose of removing sterility in females. It forms the ivory of commerce.

FAMILY 2. Common Pachydermata.

HIPPOPOTAMUS AMPHIBIUS. (Linn.) *The Hippopotamus, River-horse.*

Dental Formula.—Incisors $\frac{4}{4}$; canines $\frac{1-1}{1-1}$; molars $\frac{7-7}{6-6} = 38$.

Hab. The rivers of the central and southern parts of Africa.

Food. Roots, and various sorts of vegetables.

Use. The fat of the animal was applied to the pulse or stomach to relieve fits of ague. The tongues are preserved by drying. The teeth (*morse-teeth*) are harder and whiter than ivory, and not so apt to become yellow; used for making artificial teeth.

HYRAX CAPENSIS. (Cuvier.) *Cavia Cupensis.* (Pallas.) *The Cape Badger, the Dasse, the Coney.*

Dental Formula.—Incisors $\frac{2}{4}$; canines 0; molars $\frac{7-7}{7-7} = 34$.

Hab. The Cape colony and mountains of Africa.

Use. A substance called *Hyraceum* is deposited by the animal on the mountains on which it dwells. This substance has been supposed by the natives of the Cape to be the inspissated urine of the animal; but Dr. E. Marting and others regard it as a secretion connected with the sexual functions. It has been proposed as a substitute for castor, which it somewhat resembles in smell. It is of a blackish-brown colour, and presents in places a rather resinous appearance.

RHINOCEROS UNICORNIS. (Linn.) *Rhinoceros indicus.* (Cuv.) *The Rhinoceros.*

Dental Formula.—Incisors $\frac{4}{4}$; canines 0; molars $\frac{7-7}{7-7} = 36$.

Hab. In the deserts of Africa, and several parts of Asia.

Food. Herbs and prickly shrubs.

Use. The horn was supposed to be useful in cases of poisoning, contagion, &c. The skin, steeped in wine, was supposed to be beneficial in malignant diseases.

SUS SCROFA. (Linn.) *The Hog.*

Dental Formula.—Incisors $\frac{4}{6}$ or $\frac{6}{6}$; canines $\frac{1}{1} - \frac{1}{1}$; molars $\frac{7}{7} - \frac{7}{7} = 43$ or 44.

Hab. The temperate parts of Europe and Asia; northern parts of Africa; America.

Food. Various roots, and many animal and vegetable substances.

Use. Nearly every part of the pig contributes to the wants of man. The flesh, preserved in different ways, constitutes *pork, bacon, ham*, &c. The strong hairs, called *bristles*, from the neck and back, are used by shoemakers. The skin is sometimes tanned for saddle-seats. The intestines are fried and eaten, and the blood is made into a food called *black-pudding*. The fat of the animal, called *adeps suillus*, and by some *axungia, axunge*, or *lard*, is officinal in all the modern Pharmacopœias.

FAMILY 3. Solipeda.

EQUUS.

The family of horses, or Equidæ, have but a single finger or toe terminating each extremity, incased in a horny hoof or shoe. There are, however, on each side of the metacarpus and metatarsus two small rudimentary processes, representing two lateral toes. The fol-

lowing is the form of dentition belonging to this family of Pachyderms.

Dental Formula.—Incisors $\frac{6}{6}$; canines $\frac{1-1}{1-1}$; molars $\frac{7-7}{6-6} = 42$.

EQUUS ASINUS. (Linn.) *The Ass.*

Hab. Everywhere.

Food. Grass; it can eat almost any kind of food.

Use. Extraordinary medicinal virtues have been attributed to various parts of the ass's body. The ass's hoof occurs among the simples of the Lond. Pharm., 1618; it was considered an effectual discutient; when burned it was said to be useful in epileptic and hysterical affections. The flesh has been eaten and esteemed a delicacy; the skin is made into shagreen; the milk is considered nutritious.

EQUUS CABALLUS. (Linn.) *The Horse.*

Hab. In almost all countries.

Food. Grass, hay, oats, &c.

Use. The fat, excrement, and hoof of this animal may be found among the simples of the Lond. Pharm., 1618. Mare's milk is laxative. The flesh and dung were considered useful in the bites of serpents. The fume of the fat "expels the dead birth and secundine." The stone found in the stomach, called *hippolithus*, was considered to possess virtues similar to those of the bezoar. The bones are boiled for the grease they contain, and burned in close vessels to make animal charcoal. The skins are tawed to make thongs of whips; and catgut is prepared from the intestines. Of all animals the horse is most useful to man.

ORDER 8. RUMINANTIA. (*Pecora*, Linn.)

Essential characters. No incisors in the upper jaw; eight generally in the lower. Molars twelve in each jaw, the crown marked with two double crescents of enamel, of which the convexity is outwards in the lower jaw, and inwards in the upper. No clavicles. Extremities disposed for walking. Two toes furnished with hoofs; metacarpal and metatarsal bones united; four stomachs; intestines long; two or four inguinal mammæ. Horns in the males, and often in the females, of most species.

The term Ruminantia indicates the singular faculty possessed by these animals of masticating their food a second time, by bringing it back to the mouth after a first deglutition. This faculty depends on the structure of their stomachs, of which they have always four; the first is called the *paunch*, which receives the vegetable matter coarsely bruised by mastication, whence it passes into the second, called the *honeycomb* or *bonnet*. From this second stomach the food, after being moistened and compressed into little pellets, reascends to the mouth to be re-chewed. The aliment, thus re-masticated, descends directly into the third stomach, called the *leaflet*, (feuillet,) so called from its being laminated longitudinally like the leaves of a book; and thence it descends to the fourth stomach, the *caillette*, the true organ of digestion. This order has been divided into two families, those without horns, or

AKERATOPHORA, (*a* priv. κερας, horn, and φερω, to carry,) and KERATOPHORA, or those carrying horns. Under the first family are ranged the *Camelus* (Linn.), Camel. *Moschus* (Linn.), Musk. Under the second are contained the *Cervus* (Linn.). Species *C. alces*, the Elk, or Moose-deer. *Camelopardalis* (Linn.), sp. *C. Girafa*, (Fr. Cuvier,) the Giraffe. *Antelope*, (Linn.) Sp. *A. dorcas*, the Gazelle, &c. &c. *Ovis*, the sheep, and *Bos taurus*, or common Ox.

BOS TAURUS (Linn,). *The Ox.*

Dental Formula.—Incisors $\frac{0}{8}$; canines 0; molars $\frac{6-6}{6-6}$ = 32.

Hab. In every part of the world.

Food. Grass, hay, leaves, &c. &c.

Use. The importance of this animal is fully recognised for its services in tillage, for its flesh, the milk it affords, and its skin; even the horns are turned to good account. Various parts of the animal have also been recommended as useful in medicine; the blood, fat, and excrement, have been enumerated among the simples in the Lond. Pharm. of 1618. The filings of the horn, taken with water, were thought useful in arresting hæmorrhage and intestinal fluxes. The excrement was supposed capable of dispersing tumours and hard swellings.

Goldbeater's skin is prepared from the peritoneal membrane of the cæcum, which, as soon as it is detached, is pulled out to the extent of two feet or upwards, then dried. The dried membrane, which has the appearance of a piece of packthread, is then soaked in a very weak solution of potash, and spread out flat on a frame; another membrane is then taken and applied to the other, so that the two surfaces which adhered to the muscular membrane of the intestine may adhere together; they unite perfectly, and soon dry. The skins are then glued on a hollow frame, washed with alum water, dried, washed with a solution of isinglass in white wine, to which spices, such as cloves, nutmegs, ginger, or camphor, have been added, and varnished with white of egg. These skins are used to separate the leaves of gold while being beat to the proper degree of thinness; they are used also as a defensive for cuts.

The *allantoides of calves* are prepared in a somewhat similar manner to the above, for making air-balloons for lecturers, &c.

The *bladders* and *intestines* of oxen and calves are prepared by removing the fat, washing them in solution of chloride of lime, blowing them out, and then drying them. These are used for covering pots, and other similar purposes.

BOS BUBALUS. (Linn.) *The Buffalo.*

Originally a native of India, but brought to Egypt, Greece, and Italy, during the middle ages. The buffaloes generally herd in marshy places, and feed on large plants, such as would not suit our oxen. The skin makes good leather; the flesh is coarse and not much esteemed; the milk is good. Some of the buffaloes of India have very large horns, which are brought over to this country.

CAMELUS. (Linn.) *Camel.*

Dental char. Teeth, thirty-four. Sixteen in the upper jaw; viz. two incisors—for the camels and the llamas have these, and form the

exceptions, the other ruminants being without any incisors in the upper jaw—two canines, twelve molars. Eighteen in the lower jaw; viz. six incisors, two canines, ten molars.

Gen. char. Lower incisors in the form of cutting wedges; upper incisors sub-lateral: canines conical, sub-erect, strong; false molars situated in the interdentary space on either side. Head long, ears small, neck elongated. Back with fleshy bosses or haunches; tail moderate. Toes united below. Teats, ventral, four in number. There are two species.

1. CAMELUS BACTRIANUS. (Linn.) *The Bactrian Camel.*

Char. Two humps on the back. Length about ten feet. Colour generally dark brown.

Hab. Persia, Turkey, &c.

2. CAMELUS DROMEDARIUS. (Linn.) *The Dromedary.*

Char. One hump in the middle of the back. Length about eight feet. Hair pale brown.

Hab. Arabia, Africa, &c.

Use. Great virtues were assigned by the old physicians to the milk of the camel in various diseases. Avicenna states that when the camel is newly impregnated, the milk from the animal relieves asthmatic affections. According to Rhases, "it strengthens the liver, openeth obstructions, looseneth the hard spleen, and helpeth the dropsy, being drunk hot, especially sugar being mixed therewith." In the writings of Rhases and Avicenna, more especially, frequent mention is made of the medicinal virtues of camel's milk.

CAPRA. (Linn.) *The Goat.*

Char. Horns directed upwards and backwards; chin generally furnished with a long beard. Forehead generally concave.

Hab. In almost all parts of the world. The *Capra ægragus*, which seems to be the original stock of our domesticated goats, dwells in troops along the mountains of Persia, and probably on those of other countries also, as on the Alps. The oriental bezoar is a concretion found in its intestines.

CERVIDÆ.

A family of solid-horned ruminants; the horns caducous, and belonging, generally speaking, to the male only.

The reproduction of the horns is annual in the deer of temperate and cold climates; it is supposed that some of the species inhabiting hot climates do not cast them every year. The palmated horn seems more especially to belong to those deer which inhabit the northern latitudes.

Dental formula.—Usually the same as in the giraffes, goats, antelopes, sheep, oxen, &c.; viz.

$$\text{Incisors } \frac{0}{8};\ \text{canines } \frac{0-0}{0-0};\ \text{molars } \frac{6-6}{6-6} = 32.$$

In the above formula the canines are noticed as absent: this rule, however, is not without exception, some of the species presenting canines similar to those of the *Musks* (*Moschus*) in the upper jaw.

CERVUS ALCES. (Linn.) *The Moose*, or *Elk.*

Description. As large as a horse, and sometimes larger; muzzle cartilaginous and inflated; a pendulous swelling under the throat; hair stiff, and of a more or less deep ash-colour. Horns increase with age so as to weigh from fifty to sixty pounds; body round, compact, and short; tail about four inches long. During its progress, it holds the nose up. This attitude prevents it from seeing the ground distinctly; hence it sometimes trips by treading on its fore-heels, and gives itself heavy falls. From this circumstance it was supposed to have frequent attacks of epilepsy, and to be obliged to smell its hoof before it could recover. Hence the Teutonic name of *Elend*, (miserable,) and the reputation of the fore-hoofs, especially, as a specific against epilepsy. The elk was undoubtedly the Αλκη of Pausanias, who describes it as being ελαφου και καμηλου μεταξυ, "between a stag and a camel." It was the *Alce* of Cæsar and Pliny.

Habitat. The marshy forests of the north of both continents, especially Sweden, Norway, Canada, Russia, Prussia, Hungary, &c.

Food. The moose-deer feeds on the tops of large plants and the leaves of trees in summer, and in the winter on the tops of willows and the small branches of the birch-tree.

Use. The flesh of the elk is said to be excellent, that of the young especially. The tongue and the nose are by some considered great delicacies. As a medicinal substance, the hoof of the elk occurs among the simples of the Lond. Pharm. of 1618, as a remedy in epilepsy.

CERVUS DAMA. (Linn.) *The Deer.*

Gen. char. Incisors $\frac{0}{8}$; canines $\frac{0}{0}-\frac{0}{0}$; or $\frac{1}{0}-\frac{1}{0}$; molars $\frac{6}{6}-\frac{6}{6}$. Canines, when present, compressed, and bent back. Head, long, terminating in a muzzle. Ears, large and pointed. Body slender. Horns solid, deciduous, palmated, branched and simple, in the males; females, in general without horns.

Hab. In all parts of the world.

Food. Grass, hay, herbs, and leaves of shrubs and trees.

Use. Decoction of hartshorn, nutritive and demulcent. Hartshorn shavings are ordered in the preparation of the Pulv. Ant. Compositus. The marrow of the leg of the deer, as also the suet, are among the simples ordered in the Lond. Pharm. 1618.

CERVUS ELAPHUS. (Linn.) *The Stag.*

Description. Horns with three anterior antlers, all curved upwards, the summit forming a crown of snags from a common centre. Lachrymal sinuses. Fur red-brown in summer, with a blackish line along the back, and on either side a number of small marks of a pale fawn colour; in winter, the fur is of a uniform grey-brown colour.

Hab. Europe, Asia, and north of Africa.

Use. The antlers of this species are used for the same purposes as those of the Cervus Dama.

CERVUS TARANDUS. (Linn., Buff.) *The Rein-Deer.*

Description. Size of a stag, but has shorter and stouter legs; both sexes have antlers divided into several branches, terminating by age in

broad denticulated palms. Fur, brown in summer, and becoming nearly white in winter.*

Hab. Norway, Lapland, Sweden, the northern parts of America.

Use. The flesh, the milk, and the hide, contribute to the food and clothing of the Laplanders.

MOSCHIDÆ.

The Moschidæ are a family of ruminant animals familiarly known as *Musk-Deer*.

Linnæus divides the genus Moschus, which he places between *Camelus* and *Cervus*, under his order *Pecora*, as having no horns, and the upper canine teeth solitary and exserted. Cuvier gives it the same position assigned to it by Linnæus. Cuvier states that the Musks only differ from the other ruminants in the absence of horns, in having a long canine tooth on each side of the upper jaw, which comes out of the mouth in the males, and finally, in having in their skeleton a slight fibula, which has no existence in the camels.

MOSCHUS MOSCHIFERUS. (Linn.) *The Musk-bearing Animal.*

Gen. char. Incisors $\frac{0}{8}$; canines $\frac{1}{0} - \frac{1}{0}$; molars $\frac{6}{6} - \frac{6}{6}$. No canines in the females. Ears long and acuminated. Body slender. Feet hoofed. Two inguinal *mammæ*.

Sp. char. Fur grey-brown; hair coarse. Pouch, before prepuce of the male, filled with a musky substance.

Hab. Siberia, China, and Thibet.

Food. Spikenard, and other sweet plants.

Use. The substance called *Musk* is a dark-brown or blackish, granular, and slightly unctuous matter, contained in a sac, situated near the organs of generation of the male animal. There are three principal varieties of musk met with in commerce—namely, *Chinese*, *Russian*, and *Indian*. Musk is a powerful stimulant and antispasmodic, and has been found a valuable remedy in all diseases attended with spasms and low fever.

OVIS ARIES. *The Sheep.*

Dent. Form.—Incisors $\frac{0}{8}$; canines $\frac{0}{0} - \frac{0}{0}$; molars $\frac{6}{6} - \frac{6}{6} = 32$.

Gen. char. Horns (generally present in both sexes) wrinkled transversely, turned laterally in a spiral form. *Ears* small. *Legs* slender. *Mammæ* two.

Sp. char. Horns arched backwards. *Colour* generally fawn.

Hab. This animal is generally domesticated everywhere.

Food. Herbs, leaves, &c.

Use. It is principally used in medicine for the suet, which is employed as a basis for ointments and cerates. The flesh both of the young and adult animal is much used as food in this country, and is considered easily digestible and nutritive.

Coarse catgut is made from the intestines, by removing the mucous and peritoneal membranes, then soaking them in water, to each gallon

* The ancients ascribed to this animal the power of assuming any colour it wished.

of which is added an ounce or two of carbonate of potash; then scraping them with a copper plate having a semicircular notch, twisting them according to the use for which they are intended, and sometimes colouring them, and exposing them to the fumes of burning sulphur.

Fine catgut is prepared in much the same way as the above described, but more care is taken, and a longer time occupied in the process.

The *cæcal intestines* are prepared by soaking them in an alkaline solution, then cleaning, scraping, stretching, sulphuring, and finally cutting them into the proper length, when they constitute the *baudruches*, *condoms*, or *French letters*.

Order 9. CETACEA.

These are mammiferous animals without hind feet. To the genera which, up to this time, naturalists had ranked among the *Cetacea*, Cuvier adds those which had previously been confounded with the Walrusses. This order is now divided into two families:—1st. The *Herbivorous Cetaceans*, whose teeth have a flat crown, which determines their mode of life, as they often leave the water to creep and feed on the banks. They have two teats on the breast, and have hairy moustaches. 2nd. The *Ordinary Cetaceans*, which are distinguished from the preceding by the apparatus from which they have received the name of *Souffleurs*, or Blowers. They take into their capacious mouth, together with their prey, large volumes of water, the latter of which it is necessary subsequently to separate; this is effected by forcing the water through a small aperture, passing from the mouth to the upper part of the head, while the prey is retained by a kind of strainer formed of the substance called *whalebone*.

The second family, the *Ordinary Cetaceans*, are subdivided into two tribes:—1st, those, the size of whose heads bears an ordinary proportion to that of their bodies; 2nd, those whose heads are disproportionately large.

Family 1. Herbivorous Cetaceans.

Halicore. (Ill.) *The Dugong.*

Gen. char. Body elongated; tail-fin in form of a crescent; molars composed each of two cones united by the side; small pointed tusks inserted in the incisive bones; skin very thick and without hairs.

Dent. Form.—Incisors $\frac{4}{6 \text{ or } 8}$; canines 0; molars $\frac{5-5}{5-5} = 30$ or 32.

Hab. Sumatra and all the warm seas of the Indian Archipelago.

Use. Flesh superior to the buffalo or common ox. A very sweet, pure oil, is obtained from this animal, which has been proposed as a substitute for cod-liver oil, from which, however, it differs in its chemical reaction.

Manatus. (Cuv.) *Manatee. Sea-Cow.*

Gen. char. Body oblong; molar teeth marked with two transversal elevations on their crown; no canines in the adult; vestiges of nails on the edges of their anterior extremities or pectoral fins; pectoral

mammæ; skin very thick and naked; whiskers very strong and close set: horizontal tail, thick, tegumentary, and elongated oval.

Dental Formula.—Incisors $\frac{2}{0}$; molars $\frac{8-8}{8-8} = 34$.

Hab. The warmer parts of America and its islands. Western Africa.

Use. The flesh is excellent, either fresh or salted.

Family 2. Ordinary Cetaceans. *Tribe* 1.

Delphinidæ. *The Dolphins.*

These have an elongated body; jaws more or less projecting in the form of a beak; no tusks; they have a great number of teeth, simple and equal in size, which are, however, wanting in some species; no baleen, or whalebone; blowholes, with a common opening on the head.

The *dental formula* may be stated generally as consisting of from 84 to 95 teeth in the upper jaw, and from 84 to 95 in the lower = 168 to 190.

Delphinus phocæna. (Linn.) *Common Porpoise.*

Gen. char. Muzzle short, convex, and not terminating in a rostrum; teeth numerous, placed irregularly in each jaw; a dorsal fin.

Dental Formula.—Molars $\frac{40 \text{ to } 46}{40 \text{ to } 46} = 80$ to 92.

Hab. Atlantic Ocean; seas of Europe.

This seems to be the φωκαινα (*phocæna*) of Aristotle. Some have supposed it to be the *Tursio* of Pliny. It is the *porco pesce* of the Italians (whence probably the English term *porpesse*): the *Meerschwain* of the Germans.

Use. The oil produced from the fat surrounding the body is of the purest kind; the skin, when tanned and dressed, is used for wearing apparel. The flesh is by some much esteemed.

Delphinapterus leucas. (Gm.) *Delph. albicans.* (Fabr.) *The Beluga*, or *White Whale.*

Gen. char. Head obtuse; muzzle short and conical, or terminated in an elongated rostrum; number of teeth variable; no dorsal fin.

Dental Formula.—According to F. Cuvier $\frac{9-9}{8-8} = 34$.

Hab. The Northern Ocean.

Use. The oil is said to be of the best, whitest, and finest quality, and of their skins a sort of morocco leather is said to be made, which, though thin, will resist a musket-ball. The flesh is said to resemble beef.

Monodon monoceros. (Linn.) *Narval. Norwhal*, or *Unicorn Whale.*

Gen. char. Body elongated; a slight longitudinal projection, or crest, in the place of the dorsal fin; flippers oval.

A long, straight, and pointed tusk, projecting from the upper jaw, has been long known as the *unicorn's horn.* The tusk is sometimes ten feet long, marked with spiral grooves. The animal has the germ of a second of these defensive appendages, but usually only that on the left side becomes fully developed.

Hab. The Northern Ocean.

Use. The blubber yields a very superior oil, which, as well as the flesh, is considered a great dainty by the Greenlander, who regards the norwhal as the herald of the mysticete. The ivory of the tusk is considered superior to that of the elephant.

Family 2. Ordinary Cetaceans. *Tribe* 2.

Balenidæ, or Balænas.

Gen. char. Head not so convex forward as that of the cachalot: both sides of the upper jaw furnished with transverse plates of a fibrous horny substance, with loose or unwrinkled edges, being the baleen or whalebone; lower jaw entirely unarmed. No dorsal fin, which in some species is replaced by a boss or hump.

In this genus, the baleen, or whalebone, is most highly developed. J. Hunter describes this extremely flexible animal substance as being of the same nature as horn,—a term used by him to express what constitutes hair, nails, claws, feathers, &c. It consists, he remarks, of thin plates of some breadth, and in some of very considerable length, their breadth and length in some degree corresponding to one another; when longest, they are commonly the broadest, but not always so. The plates differ in size in different parts of the same mouth, more especially in the large whalebone whale. "They are placed," says Hunter, "in several rows, encompassing the outer skirts of the upper jaw, similar to teeth in other animals. They stand parallel to each other, having one edge towards the circumference of the mouth, the other towards the centre or cavity."—(See Hunter on Whales.)

Balæna mysticetus. (Linn.) *Greenland Whale.*

Description. Colour velvet-black, grey, and white, with a yellow tinge. Head very large, forming nearly one-third of the entire bulk, the under part being flat. On the most elevated part of the head are situated the blowholes, two longitudinal apertures, like the holes in the belly of a violin, and from eight to twelve inches long. There are upwards of three plates of whalebone on each side of the jaw. There is no dorsal fin. The horizontal tail is flat and semilunar, indented in the middle. The eyes not much larger. From sixty-five to seventy feet appears to be the extreme length of a full-grown mysticete.

Hab. This is usually stated to be very extensive: it is said by some that it inhabits all the seas of the globe, especially the two poles.

The *Common Whale*, *Greenland Whale*, or *Great Mysticete*, appears to be the μυστικητος of Aristotle (Hist. Anim. iii. 12); it is the *Baleine Franche* and *Baleine Ordinaire* of the French; *Greenlands Walfish* of the Swedes; and *Morfil Cyffredin* of the Ancient British.

Food, habits, &c. In the whale, the sense of hearing seems to be rather obtuse. Throat so narrow as scarcely to admit a hen's egg. The usual rate of swimming about four miles an hour; but when harpooned, they will descend at a velocity of seven or eight miles an

hour. The mysticete seldom remains longer than two minutes at the surface to breathe, during which period it blows eight or nine times; it then descends for five or ten minutes. Though having no voice, according to Mr. Scoresby, it makes a loud noise in blowing. The smallness of the gullet is only fitted for swallowing small animals, such as the *Clio borealis*, numerous specimens of which will be found in the preparation No. 323 A. of the Physiological Series of the Museum of the R. C. S., London. This small mollusc is said to constitute the chief support of the mysticete, and the structure and disposition of the whalebone plates are such as to retain these or any other small species of animal in the capacious mouth of their devourer, while the water taken in along with them drains through the interstices of the plates. Nine or ten months is supposed to be the term of utero-gestation; and so attached is the mother to her young one, or "sucker," as it is called, that it is often struck as a snare to the affectionate parent, for she will not leave it, and so falls a victim to her maternal love.

Use. The mysticete is everything to the Esquimaux and the Greenlander. They eat the flesh and fat with great relish. The membranes of the abdomen serve them for clothing, and the thin transparent peritoneum admits light through the windows of their huts, while it keeps out the weather. The bones are made into props for their tents, or aid in the formation of their boats, and supply them with harpoons or spears. To civilized nations the oil made from its fat or blubber, and the whalebone, have long made it a great commercial object. The fat, or blubber, lies immediately beneath the skin, being from ten to twenty inches in thickness, varying in different parts of the body. The colour is not always the same, being white, red, and yellow. It is chiefly for the blubber that the Greenland fishery is carried on. It is cut from the body in large lumps, and carried on board the ships, and then cut into smaller pieces. The fleshy parts and skin, connected with the blubber, are next separated from it, and it is again cut into such pieces as will admit of its being passed into casks by the bunghole, which is only three or four inches in diameter. In these casks it is conveyed home, where it is boiled in vessels capable of containing from three to six tons, for the purpose of extracting the oil from the fritters, which are tendinous fibres, running in various directions, and containing the oil, or rather connecting together the cellular substance which contains it. The following table, taken from Mr. Scoresby's work, shows the average quantity of oil a whale of each size of bone will produce:—

Bone.	Oil.
1 foot	$1\frac{1}{2}$ tons.
2 feet	3 ,,
3	$3\frac{1}{2}$,,
4	4 ,,
5	$4\frac{1}{2}$,,
6	$5\frac{1}{2}$,,
7	7 ,,

Bone.	Oil.
8	9 tons.
9	11 „
10	13 „
11	16 „
12	20 „

PHYSETER, or *Cachalot*, (*φυσαω*, to blow.)

Gen. char. Length of head = $\frac{1}{3}$ or $\frac{1}{2}$ the whole length; upper jaw large, elevated, and either without teeth, or with very few, which are short and nearly hidden by the gum; lower jaw narrow, and armed with stout conical teeth; orifices of the blowholes united; no dorsal fin.

In a specimen given by M. F. Cuvier, and found in the Paris Museum, no teeth were observed in the upper jaw;—in the lower there were 27 on each side: = 54.

PHYSETER MACROCEPHALUS, or *Spermaceti Whale.*

Hab. This species has been seen in almost all seas; but it is now principally found in the Southern Ocean, on the coasts of America, Japan, New Guinea, &c. Cachalots have occasionally been stranded on the British Islands, as in the Frith of Forth, the Orkneys, &c.

Use. From this animal it is that the commercial spermaceti (*cetaceum; spermaceti*) is obtained. This substance is found in several parts of the body, mixed with the common fat. The head is, however, the great reservoir of this substance. Here, it is found (mixed with oil) in a large cavity in the upper maxillary bone, anterior to, and quite distinct from, the true cranium. There are two places in the head which contain the oil, the one above and the other below the nostrils. The purest oil is contained in the smallest cells, lying above the nostril, along the upper part of the head. The "case," as it is called, which is situated on the right side of the nose and upper surface of the head, contains spermaceti mixed with oil. Into this an opening is made, and the liquid contents are taken out by a bucket. This is called "head-matter." The spermaceti is separated from the oil by pressure, and purified by boiling it with a caustic ley. *Ambergris* is obtained from the cæcum of this animal.

CLASS II. AVES, BIRDS.

Birds are oviparous vertebrata, with a double system of circulation and respiration, organized for flight. Their distribution into orders is founded, like that of the mammalia, on the organs of manducation, or the beak, and on those of prehension. This class comprises six orders:—1. ACCIPITRES (*Birds of Prey*). 2. PASSERES (*Sparrow-kind*). 3. SCANSORES (*Climbers*). 4. GALLINACEÆ (*Poultry-kind*). 5. GRALLÆ (*Waders*). 6. PALMIPEDES (*Web-footed*).

ORDER 1. ACCIPITRES. (Linn.) *Birds of Prey.*

These birds are distinguished by their hooked beaks and talons. They are among birds what the carnaria are among quadrupeds. The muscles of their thighs and legs indicate the strength of their claws; they all have four toes; the nail of the thumb and that of the internal toe are the strongest. This order forms two families, the diurnal and nocturnal—the former including the two great genera of Linnæus, the vultures and falcons; the latter his genus of owls. These genera have been subdivided by Cuvier into several sub-genera.

FALCO BUTEO. (Linn.) *The Buzzard.*
Hab. Almost everywhere.
Food. Herbs, and the flesh of animals.
Use. The testicles, boiled fresh with honey, were said to strengthen those men whose procreative powers had been enfeebled from any cause.

FALCO FULVUS. (Gm.) AQUILA. (Cuv.) *The Eagle.*
Hab. They dwell on the mountains in various parts of the globe.
Food. Birds and quadrupeds.
Use. Various parts of the eagle were supposed to be endowed with medicinal virtues. The bones of the head were considered good for removing headache. The wings placed under the feet promoted labour. The gall was converted into an errhine, in affections of the head. The brain steeped in wine useful in jaundice. The tongue, in incontinence of urine.

FALCO MILVUS. (Linn.) *The Kite.*
Hab. In almost all countries.
Food. Birds, carrion, and the like.
Use. The powder of the flesh "helpeth the gout." "The testicles drunk fasting with spring water promotes fecundity." "The blood applied with nettles helps the gout."

STRYX OTUS. (Linn.) *The Owl.*
Hab. England, France, Germany, and several other places.
Food. Wasps, bees, lizards, and mice.
Use. The flesh was recommended in paralysis and in melancholy. The brain, eaten, removed headache. The gall used to remove specks from the cornea.

VULTUR GRYPHUS. (Linn.) *The Vulture.*
Hab. Various parts of Asia and America, more especially South America.
Food. Dead bodies; birds.
Use. The flesh was used to remove various tumours in the body, as also gout and convulsion. The brain used to remove headache. The liver considered a prophylactic against the bites of serpents. The fume of the excrement, as also of the feathers, used to promote parturition.

Order 2. PASSERES. (*Passer*, a Sparrow.)

This order is the most numerous of the whole class. The birds composing it have neither the violence of birds of prey, nor the fixed regimen of the gallinaceæ, nor of the water-birds; insects, fruits, and grain, constitute their food, which consists the more exclusively of grain, in proportion to the largeness of their beak, and of insects, as it is the more slender. Among them are found the singing birds, and the most complicated inferior larynx. The first division is founded on the feet; recourse is then had to the beak. The first and most numerous comprehends those genera in which the external toe is united to its fellow by one or two phalanges only; the second are called the syndactyles, in which the union extends to all but the last articulation. The first division contains the families Dentirostres, Fissirostres, Conirostres, and Tenuirostres, with their several genera and sub-genera; the second form but one family containing six genera. The Dentirostres contains the various species of the genus *Lanius*, (Linn.); of the genus *Tanager* (Linn.); of the genus *Turdus* (Linn.), as the *Turdus merula*, or common blackbird; *Turdus musicus*, or common thrush; of the genus *Motacilla*, as the *Mot. rubicola*, or stonechat; *Mot. rubecula*, or red-breast; *Mot. luscinia*, or nightingale; also the wren, wagtail, &c. &c. Among the family of the *Fissirostres*, we have the swallow. Among the *Conirostres*, we have the skylark, house-sparrow, chaffinch, goldfinch, linnet, canary-bird, &c. &c.

Alauda arvensis. *The Skylark.*

Alauda cristata. *The Lark.*

Hab. England, France, Italy, and several other parts of the globe.

Food. Corn and worms.

Use. The *Alauda cristata*, eaten roasted or boiled, "helps the colic," according to Galen and Dioscorides. The heart, applied to the thigh, "helps the colic."

Alcedo ispida. (Linn.) *The Kingfisher.*

Hab. Almost everywhere by rivers and ditches.

Food. Fishes.

Use. Eating the flesh of this bird, or applying the eyes in a linen cloth to the head of those that sleep too much, was said to cause waking. "The heart dried and hung about the necks of children helpeth the falling sickness."

Corvus cornix. (Linn.) *The Crow.*

Hab. Desolate, humid, and high places that are tilled.

Food. Corn, apples, cherries, and worms.

Use. "The eggs with myrtles make the hair black, as also the blood and brain with black wine." The brain, with vervain water, "helpeth the epilepsy." "The dung, with wool, helps the toothache. The eggs cause abortion."

Fringilla domestica. (Naum.) *The House Sparrow.*

Hab. Almost everywhere.

Food. Corn, seeds, flies, &c.

Use. The flesh was considered good against epilepsy, and also in renal calculi. The fat considered good against hard tumours. The dung was considered good against toothache.

HIRUNDO APUS, HIRUNDO RIPARIA, HIRUNDO RUSTICA, HIRUNDO URBICA } Linn. { *Common Swallow.* *River Swallow.* *Chimney Swallow.* *Window Swallow.*

Hab. In all countries.

Food. Insects.

Use. The excrement of the swallow is found among the simples of the Lond. Pharm. 1618. Drunk in sheep's milk, it was said to be good against quartan agues. The heart was said to help the memory and to sharpen the wit. The flesh, often eaten, was considered good against epilepsy. The stones in the ventricles of the swallow were used to expel things fallen into the eyes.

MOTACILLA LUSCINIA. (Linn.) *The Nightingale.*

Hab. In woods in almost all countries.

Food. Worms, ants, eggs, and bread.

Use. The gall of this bird with honey was said to clear the eyes. "The flesh eaten helps the cachexy."

STURNUS VULGARIS. (Linn.) *The Starling.*

Hab. Almost everywhere.

Food. Berries, grapes, &c.

Use. "The dung cosmetic—good in ringworm, being abstersive and drying." Flesh considered good after poison had been taken, but is injurious in hæmorrhoids, according to Arnold.

TURDUS MERULA. (Linn.) *The Blackbird.*

Hab. England, and, in fact, almost everywhere.

Food. Haws, sloes, misleberries, &c.

Use. The "flesh roasted, with myrtle-berries, helps the flux of the belly." *Aldrovand.*

ORDER 3. SCANSORES. *Climbers.*

This order includes those birds, whose external toe is directed backwards like the thumb, by which conformation they are the better enabled to support the weight of their bodies, and by which certain genera cling to and climb upon trees, whence the name *scansores*, or *climbers*. The *climbers* usually nestle in the hollow of old trees; their food, like that of the passeres, consists of insects or fruit, in proportion as their beak is more or less stout. This order is distributed into thirteen genera, and the latter into sub-genera and species. Among the species we find the jackamar, the woodpecker, the various species of the cuckoo, the cockatoo, parrot, &c.

CUCULUS CANORUS. (Linn.) *The Cuckoo.*

Hab. Almost everywhere.

Food. Flesh, flies, eggs, fruit, &c.

Use. A decoction of the dung was considered good against the bite of a mad dog. The "ashes help the pain and moisture of the stomach, as also the stone;" "good also in epilepsy."

ORDER 4. GALLINACEÆ. *Gallinæ, Linn.* (*Gallus*, a Cock.)

These birds have been so called from their affinity to the domestic cock; and like it, they generally have the upper mandible arched. Most of our barn-door fowls, and many excellent game birds, are to be found in this order. It is composed in a great measure of one natural family, and is divided into genera, sub-genera, and species.

COLUMBA MIGRATORIA. (Lath.) *Passenger Pigeon. Carolina Pigeon.*

Description. Body ash-coloured; nape golden purplish green; wing-coverts with oval spots; chest rufous; belly white. Female grey-brown; beneath whitish; chest yellowish-white.

Hab. North America.

Use. Yields an oil.

COLUMBA PALUMBUS. (Linn.) *The Ringdove.*

Hab. In almost all countries and places.

Food. Corn and other seeds.

Use. The flesh of the pigeon was recommended to persons in a languishing condition. When frequently eaten, it was said to prevent plague; good in epileptic and paralytic cases. The brain and testicles said to occasion venery.

NUMIDA MELEAGRIS. (Linn.) *The Turkey.*

Hab. Most parts of the globe.

Food. Grain and the like.

Use. Flesh very delicate and nutritious. The rough inner skin of the gizzard, salted and dried, used to curdle milk.

PAVO CRISTATUS. (Linn.) *The Peacock.*

Hab. Various parts of the world.

Food. Barley, herbs, and serpents.

Use. The broth, if fat, recommended in pleurisy; the excrement recommended for the eyes, as also in gout.

PHASIANUS GALLUS. (Linn.) *The Domestic Cock.*

Hab. In almost all countries.

Food. Corn, seeds, flies, and snails.

Use. The flesh, when young, is easily concocted; was considered beneficial in consumptions and hectic fevers. The flesh of capons seven or eight months old was much esteemed by the old physicians for its nutritious properties. The white dung was considered beneficial in colic. "The dry comb of a hen stops the involuntary discharge of urine."

PHASIANUS COLCHICUS. (Linn.) *The Pheasant.*

Hab. England, France, and other countries.

Food. Corn, seeds, and berries.

Use. The flesh was recommended in phthisis. The gall was said

to sharpen the sight. The fat recommended in the affections of the kidneys."

TETRAO COTURNIX. (Linn.) *The Common Quail.*

Description. Back brown, undulated with black; a pointed white stripe on each feather; throat brown; eyebrows whitish. Celebrated for its migrations. The bird, heavy as it is, finds means to traverse the Mediterranean.

Imported from Turkey, preserved in oil; and from Cagliari, potted with clarified butter.

TETRAO CINEREUS. (Linn.) PERDIX. (Briss.) *The Partridge.*

Hab. Almost everywhere.

Food. Corn, chickweed, snails, and ants.

Use. The liver dried was given in epilepsy.

ORDER 5. GRALLÆ. (Linn.) *Waders.*

The birds of this order derive their names from their habits, and from the conformation which causes them. They are generally long-legged wading birds, generally living in the vicinity of water, except the ostrich and cassowary, which did not originally belong to this order, as established by Linnæus. Those which have a strong bill feed on fish and reptiles, while such as have a weak one consume worms and insects. The external toe is most commonly united at its base with that of the middle one by means of a short membrane. Cuvier has divided the order into five families.

ARDEA CICONIA. (Linn.) *The Stork.*

Hab. Egypt, Ethiopia, and other places.

Food. Frogs, snakes, and fishes.

Use. The flesh was said to prevent lippitude. The ashes of the young ones were deemed good for spots in the eyes. The oil good for palsy. The gall was recommended for clearing the sight. The excrement drunk in water of use in epilepsy.

ARDEA CINEREA. (Linn.) *The Heron.*

Hab. England, France, and several other countries.

Food. Fishes, oysters, &c.

Use. The bill was supposed to possess a hypnotic effect. The flesh considered bad for those with hemorrhoids. The fat recommended as relieving the pain of gout.

FULICA CHLOROPUS. (Linn.) *The Moor Hen. Coot.*

Hab. Fenny and watery places.

Food. Herbs, seeds, and the like.

Use. The heart was recommended in epilepsy. The flesh was deemed good for the biting of spiders.

GRUS CINEREA. (Bechst.) *The Crane.*

Hab. Libya, Egypt, and Ethiopia.

Food. Fruits and herbs.

Use. The eggs were supposed good against a variety of diseases, as

cancers, palsy, and as a defence against venomous creatures. The powder of the head and eyes good in fistulas and all sorts of ulcers.

STRUTHIO CAMELUS. (Linn.) *The Ostrich.*

Hab. Africa, Libya, Ethiopia, Arabia, &c.

Food. Almost anything.

Use. The flesh has a very strengthening effect on the system. The fat useful to allay the pain of gout, as also the eggs. The feathers, which are used as articles of dress, are preserved by dipping them in weak lime-water, and then drying and stoving them. They are brought from Africa.

ORDER 6. PALMIPEDES. *Web-footed Birds.*

This order contains generally such birds as are web-footed, and fitted for an aquatic life. It is divided into four natural families:—1. The *Brachyptera*, or divers. 2. The *Longipennes*, or high-flying birds. 3. The *Totipalmes*, in which the thumb, as well as the other toes, is included in the common web, or membrane of the foot: and 4. The *Lamellerostres*, having the bill furnished with rows of laminæ, resembling fine teeth.

ANAS CYANOIDES. (Linn.) *The Duck.*

Hab. Watery and fenny places.

Food. Roots and seeds of aquatic plants.

Use. The liver was recommended in fluxes occasioned by liver disease. The excrement applied was said to be good for venomous bitings. The womb is recommended, in the *Antidotus Ecloge* of Myropsus, against the cœliac passion and spitting of blood.

ALCA IMPENNIS. (Linn.) *The Great Penguin.* The *Razor-bill* of the English.

Description. About the size of a goose, which bird it somewhat resembles in some respects. It stands with its head and body vertical; has a black compressed beak, with eight or ten furrows in it. The colour of the back is black, that of the breast, belly, and sides, white, or partly grey. There is an oval white mark between the beak and the eye. The wings are undeveloped, constituting what are called flippers. It is said to lay but one large egg, which is marked with purple blotches. When young, the beak is smooth, and there is no white frontal spot.

Hab. The Arctic seas of both continents.

ALCA TORDA, ET PICA. (Gm.) *The Common Penguin.*

Description. This bird has some resemblance to the duck, being smaller than the preceding species. The colours resemble those of the great penguin, but there is a white mark on the flippers, and one or two on the beak. This as well as the preceding species is web-footed.

The penguin of a small species, about fourteen inches in height, is found in the Sandwich Islands. On the coast of Chili, a large species, twenty-four or twenty-five inches high, is usually met with. The same bird, with a little variation of colour, is found at Cape Horn in

immense numbers on the rocks and islands, especially on Penguin Island: also on the islands on the east coast of South America, the Falkland islands, Tristan D'Acunha, and the islands and rocks along the African coast. These birds cannot fly, having no wings adapted for such purpose. They are frequently seen on the water in groups of six or eight, and are excellent divers. They breed on rocks and islets, where they congregate in vast numbers, and where their excrements accumulate in immense quantities, and constitute the chief part of the substance called *Guano*, which is now so extensively used in agriculture.

ANAS OLOR. (Gm.) *The Swan.*

Hab. Almost everywhere; it is amphibious.

Food. Grass, grain, and fish spawn.

Use. The fat was considered good for the nerves. The eggs were thought useful in erysipelas. The skin, dressed with the down, and applied to the breast, was said to assist concoction.

ANSER ANSER. (Linn.) *The Goose.*

Hab. Almost everywhere.

Food. Grain, grass, and the like.

Use. The flesh, eaten, was said to cause length of life, as also the fat. It was said to cure hydrophobia, and to excite venery. *Goose-grease*, with honey, was supposed good against the bitings of a mad dog. The large feathers of the wings, *quills*, prepared by dipping into lime-water, hardening by the fire, and the barrels coloured with dilute nitric acid, used for making pens.

PELECANUS AQUILUS. (Linn.) *The Frigat.*

Hab. They were formerly to be found in great numbers in the island of Guadaloupe.

Food. Small fish.

Use. The oil or fat of this bird was once considered a sovereign remedy for sciatica pains.

PELECANUS CARBO. (Linn.) *The Cormorant.*

Hab. Seas, rivers, fens, and such places.

Food. Eels and congers.

Use. The flesh, roasted and eaten, useful in elephantiasis and in the spleen. The blood was considered alexipharmic. The heart was thought good against quartans. "The old liver, drunk with hydromel, bringeth out the secundine. The gall, with rosin of cedar, hinders the growth of hair on the eyelids after evulsion."

CLASS III. REPTILIA. REPTILES. (*Repo*, to crawl.)

The structure of the heart in *Reptiles* is such, that at each contraction a portion only of the blood it has received from the different parts of the body is transmitted to the lungs, the remainder returning to those parts without being passed through the pulmonary organs, and without having respired. The result of this arrangement is, that the

oxygen acts less upon the blood than in the mammalia. As it is from respiration that the blood derives its heat, and the fibre its susceptibility of nervous irritation, the blood of reptiles is cold, and the muscular energy less than that of quadrupeds, and much less than of birds: thus we find their movements confined usually to crawling and swimming. In cold or temperate climates almost all of them pass the winter in a state of torpor. The smallness of the pulmonary vessels permits reptiles to suspend the process of respiration without arresting the course of the blood. No reptile hatches its eggs. The young batrachians, on quitting the egg, have the form and branchiæ of fishes, and some of the genera preserve these organs, even after the lungs have become developed.

Reptiles are divided into four sufficiently natural orders, the Chelonian, Saurian, Ophidian, and Batrachian, severally represented by the tortoise, the lizard, the serpent, and the frog. The last of these is remarkable for presenting in early life a structure different from that which it is to assume when adult; thus the young tadpole, it is well known, breathes by gills, and in some genera of this order the gills are never lost. An easy transition is thus formed from the class reptiles to the fishes.

Order 1. CHELONIA.

Testudo europæa. (Schn.) *T. orbicularis.* (Linn.) *The fresh-water European Tortoise*, or *Spotted Tortoise.*

Hab., &c. The southern and eastern parts of Europe. Its carapace is oval, but little convex, rather smooth, blackish, and marked with yellowish points. It scarcely attains ten inches in length. It is brought up on bread, herbs, insects, small fishes, &c.

Use. This is sometimes employed in Paris to make soups, and a certain kind of syrup.

Testudo græca. (Linn.) *The Land Tortoise*, or *Common Tortoise.*

Hab., &c. Greece, Italy, Sardinia, and in fact all around the Mediterranean. It is distinguished by its carapace, which bulges out equally; by its elevated scales, granulated in the centre, streaked at the edge, and marked with black and yellow spots. It scarcely attains a foot in length; and feeds on leaves, fruits, insects, worms.

Testudo imbricata. (Linn.) The *Caret* of the French.

This is not so large as the *T. mydas;* its muzzle is more elongated; its jaws are indented; it bears thirteen yellow and brown scales, which lie one upon the other like tiles; the flesh is disagreeable and unwholesome, but its eggs are a great delicacy: this it is which yields the most beautiful tortoise-shell for use in the arts.

Testudo mydas. (Linn.) *T. viridis.* (Schn.) *The Green Tortoise*, or *Green Turtle.*

This is distinguished by its greenish scales, to the number of thirteen, which, however, are not imbricated, those of the middle row being

nearly regular hexagons. It is from six to seven feet in length, and from seven to eight hundred pounds in weight. Its flesh affords a pleasing and wholesome food for navigators sailing on the torrid zone. Its eggs are also much prized, but no use is made of its shell.

Order 2. SAURIA. (Σαυρος, Lizard.)

Ess. char. Heart like that of the Chelonians; ribs moveable; mouth armed with teeth; and toes, with few exceptions, furnished with nails; skin covered with scales, or scaly granules; tail more or less long; most of them have four legs.

This order has been divided into six families, represented severally by the Crocodiles, Monitors, Iguanas, Geckos, Cameleons, and Skinks. Of these families, the first and fifth have each only one genus; the second, two; and the others have several genera.

Draco. (Linn.) *The Dragon.*

The dragon is distinguished from all the other Saurian reptiles by reason of the first six false ribs, instead of turning round the abdomen, being extended in a right line, and sustaining a production of the skin, which forms a species of wing somewhat resembling that of the bat, but independent of the four feet; it sustains the animal like a parachute in its leaping from branch to branch, but it is incapable of enabling it to fly. All the known species come from the East Indies.

Lacerta agilis. (Linn.) *The Lizard.*

There are very many species of the Lacerta which have been confounded by Linnæus under the name of *Lacerta agilis.* The most striking of these are the

Lacerta ocellata. (Daud.)

Lacerta viridis. (Daud.) *The Green Lizard.*

Hab. France, Spain, Italy, &c. &c.

Use. This Saurian reptile has been extolled as a sudorific in syphilitic diseases when eaten raw.

Scincoidii.

These constitute the sixth and last family of the Saurian reptiles. They are characterized by short feet, tongue not extensible, and by the equal scales which cover the body and tail like tiles.

Lacerta scincus. (Linn.) *Scincus Officinalis.* (Schn.) *The Scinc,* or *Skink.*

From six to eight inches long; tail shorter than the body; feet short; body yellowish, and traversed with blackish bands, covered with shining scales.

Hab. Egypt, Nubia, Arabia, Abyssinia, &c.

Use. In order to preserve this animal, the intestines were drawn out, and their place supplied by aromatic plants; the body was then dried, and wrapt up in dried wormwood leaves. It was considered aphrodisiac; it formed a constituent in the Electuarium Mithridatis.

IGUANA DELICATISSIMA. (Linn.) *Ig. nudicollis.* (Cuv.)
Hab. The Brazils, Guadaloupe.
Use. This was considered a valuable sudorific, when eaten raw, in syphilitic diseases. The flesh is an agreeable food; preserved by salting.

ORDER 3. OPHIDIA. (ὀφις, a serpent.) *Ophidian Reptiles.*

Serpents are reptiles without feet. Their very elongated body moves by means of the folds it forms when in contact with the ground. This order is principally divided into three families:—1. The snakes, (*Anguis;*) 2. The true serpents; and 3. The naked serpents. Of these, the first and third contain each but one genus; the second contains all the rest, and as these differ in several respects, is subdivided, first, into two tribes, the *double-marcheurs*, that is, those that move with either end foremost; and the serpents proper, which always advance with the head in front. The serpents proper are then divided according as they are non-venomous or venomous; and afterwards these latter according as they have isolated fangs, or fangs accompanied by the ordinary jaw teeth. Finally comes the division into genera, subgenera, and species. Among the ANGUIS, or first family, we find the species *Lacerta apoda*, Pall. *Ang. ventralis*, L., glass serpent. *A. fragilis*, L., common blind-worm. *A. meleagris*, L., javelin snake, or Cape Pintado snake. Among the serpents or second family, we have the *Amphisbæna alba*, Lacep. *Anguis scytale*, L., whip-lash snake, (σκυταλη, a whip). *Uropeltis ceylanicus*, Cuv. *Boa Constrictor*, L. *Coluber Javanicus*, Sh. Great adder of the Sunda Isles. *Crotalus horridus*, L., American rattle-snake. Then the various subgenera and species of the *Vipera*, Daud., as *Col. berus*, L., the common viper. The third and last family, or *Naked serpents*, consist of but one very singular genus, the *Cæcilia* of Linnæus. Species, *Cæc. annulata*, annulated cæcilia.

ANGUIS FRAGILIS. (Linn.) *Blind-worm.*
Hab. Very common in all parts of Europe.
Food. Worms and insects.
They bring forth their young alive.

ANGUIS MELEAGRIS. (Linn.) *Javelin Snake*, or *Cape Pintado Snake.*
Hab. The Cape of Good Hope.

ANGUIS SCYTALE. (Linn.) *The Whip-lash Snake.*
Description. About two feet long, marked with irregular black and white bands.
Hab. America.

ANGUIS VENTRALIS. (Linn.) *The Glass Serpent.*
Description. Colour, yellow-green, with black marks above; the tail is longer than the body; it is so easily broken as to have received from this circumstance the name of *glass-serpent.*
Hab. The southern states of North America.

Use. Many virtues were formerly ascribed to the liver, fat, and other parts of various species of *Anguis.* The liver was said to be good for stone in the bladder.

Boa.

The boas, properly so called, have a hook on each side of the anus, a compressed body, thickest in the middle, a prehensile tail, and small scales on the head, at least on its posterior portion. In this genus the largest of all serpents are found; some species attain the length of thirty or forty feet. A subdivision of the boas has been made, founded on differences in the integuments of the head and jaws, as follows:

1. Head covered to the end of the muzzle with small scales, like those of the body. The plates, with which the jaws are provided, not dimpled. Under this head comes the *Boa Constrictor*, L.

Boa constrictor. (Linn.) *Boa empereur.* (Daudin.) *The Devin.*

Description. Known by a broad chain extending along the back, formed alternately by large, blackish, irregularly-hexagonal spots, and by pale oval ones, the two ends of which are notched, or jagged, forming a very elegant pattern.

Hab. The New World.

Food. Animals of all kinds.

2. Scaly plates from the eyes to the end of the muzzle. No dimples on the jaws. Examples. *Boa scytale*, and *Boa murina.* (Linn.) *Boa aquatica* of Prince Maximilian.

Boa scytale. (Linn.) *Boa murina.* (Linn.)

Description. Brown: a double suit of rouud black spots along the back: ocellated spots on the flanks.

Hab. South America.

Food. Chiefly mice; whence the name *Murina.*

3. Scaly plates on the muzzle, and dimples upon the plates at the sides of the jaw. Ex. *Boa cenchria.* (Linn.) *Boa centhris* (Gmel.)

Boa cenchria. (Linn.)

Description. Yellowish, with a row of large brown rings running the whole length of the back, and variable spots on the sides. These are generally dark, containing often a whitish semilunar mark.

Hab. South America; the marshy places of the warm parts.

Food. The various quadrupeds that come to drink.

4. Plates upon the muzzle and sides of the jaw hollowed into a kind of slit under the eye, and beyond it. Example. *Boa canina.* (Linn.)

Boa canina. (Linn.)

Description. Greenish, with white irregular longish spots, somewhat annularly disposed.

Use. The excrement of the Boas, usually the *Boa constrictor*, is the source from which uric acid is most abundantly and economically procured.

COLUBER ÆSCULAPII. (Sh.)

Description. Brown, superiorly; straw-coloured inferiorly and on the flanks; scales of the back almost smooth. It is this which the ancients have represented in their statues of Esculapius, and it is probable that the Epidaurian serpent belonged to this species.

Hab. Italy, Hungary, Illyria, &c. &c.

The *Coluber esculapii* of Linnæus is a different species.

COLUBER BERUS. (Linn.) VIPERA BERUS. (Daud.) *The Common Viper.*

Hab. Arabia, Africa, and Europe.

Food. Herbs, horse-flies, cantharides, &c.

Use. According to Culpeper, "The flesh of vipers being eaten clears the sight, and helps the vices of the nerves." According to the same author, the head of the viper, which gave the bite, is the best remedy.

CROTALUS HORRIDUS. (Linn.) *The American Rattle-snake.*

This is a species of the genus CROTALUS. (Linn.)

The CROTALI are distinguished from all other serpents by the fatal subtility of the poison. Like the *Boa*, they have simple transverse plates under the body and tail. But what best distinguishes them is the noisy instrument which they carry under the tail, and which is formed of many scaly cornets, embossed loosely in each other, which move and resound when the animal moves his tail. The number of these cornets increases with age, and there remains an additional one at each moulting. The muzzle of these serpents is hollowed, with a small round fosset behind each nostril. All the species, whose country is well known, come from America. They are more dangerous in proportion to the heat of the climate or season. Their natural disposition, however, is tranquil, and rather lethargic.

Food, &c. Birds, squirrels, &c. It was once believed that it had the power of torpifying them by its breath, and even of fascinating, that is, of forcing them by its glance alone to precipitate themselves into its mouth. It appears, however, that it is able to seize them only during those irregular movements which the fear of its aspect causes them to make.

ORDER 4. BATRACHIA. (*βατραχος*, a frog.)

Ess. char. Heart, consisting of one auricle and one ventricle; two equal lungs, to which at first are added branchiæ. Most of them lose their branchiæ, and the apparatus which supports them, when they attain maturity. The envelope of the ova is membranous. The eggs become much enlarged in the water. The young differ from the adult not only in the presence of branchiæ, but in having feet which are developed by degrees. Some species are viviparous.

This order has been divided by Gray into two very natural orders or families, according as they do or do not undergo metamorphosis. Cuvier has adopted the same division, and then subdivides. The first genus is the

RANA (Linn.), of which there are several sub-genera.

Ess. char. Four legs, in the perfect state, but no tail; head flat, muzzle rounded; tongue generally soft, not attached to the bottom of the gullet but to the edge of the jaw, and folds inwards; four toes to anterior feet; the hind ones usually exhibit the rudiment of a sixth; no ribs to skeleton. Inspiration effected by muscles of the throat, which, by dilating, receive air from the nostrils; expiration, on the contrary, effected by the muscles of the abdomen. The principal species of this genus are *Rana temporaria*, L., common frog. *R. arborea*, L., tree-frog. *R. bufo*, L., common toad. *R. papa*, L., Surinam toad. The second genus is the *Salamandra*, Brongn. The principal species are the *Lacerta Salamandra*, L., common salamander; *Salam marmorata*, L., marbled salamander.

RANA BUFO. (Linn.) *The Common Toad.*

Description. Reddish or brown gray, sometimes rather olive and blackish; back covered with many rounded tubercles as large as lentiles. Hind feet semi-palmate.

Hab. It remains in obscure and sheltered places, and passes the winter in holes which it excavates. Coupling takes place in the winter, and in March and April. The common toad lives more than fifteen years, and produces at four years of age.

RANA ESCULENTA. (Linn.) *The Green Frog. Gibbous Frog.*

Description. Of a fine green, spotted with black. Three yellow stripes on the back, the belly yellowish. Four legs and no tail, in the perfect state. The tongue, which is soft, is attached, not to the lower part of the throat, but to the edge of the jaw, and is folded inwards.

Hab. This is the species so common in all stagnant waters, and in grassy places near rivers, and which is so troublesome in summer, from the continuity of its nocturnal clamours.

Use. It furnishes a wholesome and agreeable aliment. It spreads its eggs in clusters in the marshes. The liver of the frog was among the simples of the Lond. Pharm., 1618. It was considered beneficial, when dried, in quartan agues.

RANA PARADOXA. (Linn.) *The Paradoxical Frog.*

Of all the species of this genus, this is that whose tadpole grows the most. The loss of an enormous tail, and of the envelopes of the body, cause even the adult animal to be smaller in size than the tadpole, so that the earliest observers believed that it was the frog which was metamorphosed into a tadpole, or, as they said, into a fish.

Char. Greenish, spotted with brown, and particularly recognised by irregular brown lines along its thighs and legs.

Hab. Guiana.

Use. Flesh used as food.

RANA TINCTORIA. (Linn.) *Hyla T. The Stained Tree Frog.*

A very remarkable species of the genus *Hyla*, or *Tree Frog.* It is said, that if some of the feathers of a parrot be plucked out, and the skin be imbued with the blood of this animal, it causes a reproduction

of red or yellow feathers, and forms that peculiar appearance which is termed by the French *Tapire.** It is a brown species, with two whitish bands transversely united in two places (Daud. pl. viii.); the toes of the hind feet are almost free.

SALAMANDRA MACULOSA. (Laur.) *Lacerta Salamandra.* (Linn.) *The Common Salamander.*

Description. Black, with great spots of a lively yellow; on its sides are ranges of tubercles, from which, in times of danger, oozes a bitter milky fluid, of a powerful odour, and poisonous to weak animals. This probably has given rise to the fable that the salamander can resist the flames. In consequence of the length of the body and tail, which assimilates it to the Lizard, this animal was placed by Linnæus among the Lacertæ.

Hab. In the Alps, Germany, &c.; in cold moist places.

Food. Worms, insects, humus, and, according to some, milk, honey, &c.

Use. According to Avicenna, the powder is a good application for corns, and is septic.

CLASS IV. PISCES. FISHES.

The class of fishes is composed of Oviparous Vertebrata, with a double circulation, but in which respiration is altogether effected through the medium of water. For this purpose they have, on each side of the neck, an apparatus called branchiæ or gills, which consist of laminæ suspended on arches that are attached to the hyoid bone, each composed of numerous separate laminæ, and covered with a tissue of innumerable blood-vessels. The water which the fish swallows escapes between these laminæ through the branchial openings, and, by means of the air it contains, acts on the blood that is continually arriving in the branchiæ from the heart, which only represents the right auricle and ventricle of warm-blooded animals. This blood, having received the benefit of respiration, is poured into an arterial trunk under the spine, which, exercising the functions of a left ventricle, distributes it to every part of the body, whence it returns to the heart by the veins. In several species immediately under the spine, there is a bladder filled with the air, which, by compression or dilatation, varies the specific gravity of the fish, and assists it to rise or descend. Progression is effected by the motion of the tail, which, by striking the water alternately right and left, forces them forward; the branchiæ, by impelling the water backwards, may also contribute to this effect. The fins, which correspond to the anterior extremities, are termed *pectorals*, those answering to the posterior, *ventrals*. Fishes are divided into two distinct series, the OSSEI and CHONDROPTERYGII; in the former, the skeleton is formed of true bone, while in the latter it always remains in the state of cartilage or gristle, (χονδρος, cartilage, and πτερυξ, a fin.) The former (Ossei) is divided into six, the latter into two orders; the principal characters being

* And hence its French name *Rainette à tapirer.*

derived from the first gills, as is evident from the names of the orders.

	Series.	Order.
Fishes.	I. Ossei, (bony fishes.)	1. Acanthopterygii. 2. Malacopterygii Abdominales. 3. Malacopterygii Subbrachii. 4. Malacopterygii Apodes. 5. Lophobranchii. 6. Plectognathi.
	II. Chondropterygii, (cartilaginous fishes.)	7. Eleutherobranchii, (gills free; ελευθερος, free.) 8. Pectobranchii, (gills confined or fixed; πηκτος, fixed.)

First Series of Fishes. OSSEI.

Order 1. ACANTHOPTERYGII.

(Spiny-finned; ακανθος, a spine.)

Ess. char. Spines occupying the first rays of their dorsal, or which alone support the first fin of their back, when there are two: sometimes, instead of a first dorsal, there are only a few free spines. The first rays of their anal are spines, and there is generally one to each ventral.

The Acanthopterygians make three-fourths of all the fishes known. The families into which they are divided are in general very natural, but present so many varieties with respect to their characters, on which it might be supposed they could be grouped into orders or other subdivisions, that it has been found expedient to leave them all together. There are fifteen families of the Acanthopterygians.

Cottus scorpius. (Linn.) *The Father Lasher.*
Hab. On our sea-coast.
Use. Pressed for oil.

Gasterosteus aculeatus. (Linn.) *The Stickleback.*
This extremely small fish is in some places so plentiful as to be pressed for its oil; the marc being used as manure.

Mullus barbatas. *The Mullet.*
Hab. In the Northern Ocean, and in the Mediterranean.
Food. Almost anything.
Use. Difficult in digestion, but nutritious. "Good in colic from cold, and pituitous humours. *Applied* fresh, they help the bitings of the sea-dragons, scorpions, and spiders."

Scomber scombrus. (Linn.) *The Mackerel.*
Hab. The Ocean and Mediterranean.
Food. They feed near sandy shores.
Use. Supposed good for those labouring under hepatic diseases.

Scomber thynnus. (Linn.) *The Tunny.*

Hab. The Mediterranean Sea.
Imported from Italy; preserved in oil, or salted.

SPARUS AURATA. (Linn.) *Lunulated Gilt Head.*
A beautiful fish, called by the ancients *Chrysophris*, (golden eyebrow,) from a golden-coloured band passing from one eye to the other. The flesh is salted.

SPARUS PAGRUS. (Linn.)
Hab. The Indian seas, and the shores of the United States. The flesh said to be poisonous, and used for suicide. (Gray.)

ORDER 2. MALACOPTERYGII ABDOMINALES.

(Soft-finned; μαλακος, soft.)

Char. Ventral fins behind the pectorals; rays soft or articulated.
There are five families of this order. The first of these is the Cyprinoides, or the carp family: this includes the following species among others, the carp, the barbel, the gudgeon, the tench, the bream, the roach. The second family, or the ESOCES, contains the species of pike. The fourth family, or salmons, contains the *Salmon, properly so called*, or the *Trout*. The fifth family, called CLUPES, comprehends the herring, shad, sprat, the Clupea encrasicholus (Linn.) or Anchovy.

CLUPEA ENCRASICHOLUS. (Linn.) *The Anchovy.*
A little sea-fish, as thick and as big as one's finger, having a thick head. The little anchovies are valued more than the larger ones. The anchovies are taken in several parts, as in the river of Genoa, in Catalonia, at Nice, Antibes, St. Tropez, and other places in Provence. They are generally taken in the night, always in May, June, and July, when they come from the great ocean into the Mediterranean to go to the Levant.
Use. Aperitive and stimulating to the stomach. *Pomet.*

CLUPEA HARENGUS. (Linn.) *The Herring.*
Hab. In the Baltic.
Food. According to some, only water.
Use. When *salted*, they are said to promote the secretion of urine. The *pickle* was used in clysters, in pains of the hips, and dropsy.
Clupea catulus, white biat. *Clupea pilchardus*, pilchard.

CLUPEA SPRATTUS. (Linn.) *The Sprat.*
Hab. Abundant on our coasts.
Use. A cheap article of diet among the poor. The whole fish, not gutted, is preserved in brine. Gutted, headed, and pickled in vinegar, it is used for *anchovies*.

CYPRINUS ALBURNUS. (Linn.) *The Bleak, or Bley.*
Hab. Throughout Europe.
Use. Said to furnish false pearls. The scales used to make oriental essence. (Cuvier and Gray.)
CYPRINUS BRAMA. (Linn.) ABRAMIS. (Cuv.) *The Bream.*
Hab. Clayey rivers and pools.
Food. Mud and herbs.

Use. The *Cud-bream*, or *Scarus ruminans*, is the best and lightest fish of the river, fit for sick and weak persons.

CYPRINUS CARPIS. (Linn.) *The Common Carp.*

Hab. Rivers, ponds, and lakes. It was introduced into England in 1574, by Leonard Maschall.

Food. Larvæ of insects, worms, roots, and young sprouts of plants.

Use. "The spawn serveth to make red caviare of." The fat was considered aphrodisiac. The gall was supposed good in dimness of sight. Some medical men have ascribed to this fish, when eaten in excess, the property of inducing fits of gout.

CYPRINUS GOBEO. (Linn.) *Gobius Vulgaris.* (N.) *The Gudgeon.*

Hab. Almost everywhere; in England, &c.

Food. Worms, grubs, and the fry of other fishes.

Use. The *white* was considered better than the *black*. When roasted, "they help dysenteries." According to Dioscorides, "they help the bitings of mad dogs."

CYPRINUS LEUCISCUS. (Blaine.) *The Dace.*

Hab. The Rhine.

Use. Scales used to make oriental essence.

CYPRINUS RUTILUS. (Linn.) *The Roach.*

Hab. Almost in all rivers, and in streams.

Food. Worms of various kinds, &c.

Use. This was considered a very healthful fish, whence the proverb, "as sound as a roach." The flesh was considered light, sound, and wholesome.

CYPRINUS TINCA. (Linn.) *The Tench.*

Hab. Standing waters among reeds.

Food. Mud.

Use. "Laid to the soles of the feet, they often draw away the ague." The old physicians used them to ease pains of the head and limbs.

ESOX LUCIUS. (Linn.) *The Pike.*

Hab. Rivers and pools, almost everywhere.

Food. Fishes and frogs, &c.

Use. "The ashes of the jaws helpeth the stone. Drunk in wine will act as a diuretic. The powder of the teeth considered good in leucorrhœa. The gall cures the ague." The fat (to be found among the simples in the Lond. Pharm. 1618) was considered to act beneficially as a revellent in catarrhs, when rubbed to the soles of the feet and breasts of infants.

SALMO ALPINUS. (Linn.) *The Trout of the Alps.*

Hab. It inhabits the lakes of Lapland.

Use. It is a valuable source of food to the Laplanders in the summer. The flesh preserved by potting is called *Potted Char.*

SALMO SALAR. (Linn.) *The Salmon.*

Hab. The northern seas, from which it enters our rivers, in large shoals, in the spring.

Food. Little fishes.
Use. This is too well known to require description.

SILURIS GLANIS. (Linn.) *The Shad.*
Description. The largest of the fresh-water fish of Europe, being sometimes six feet or more in length, and weighing three hundred pounds.
Hab. It is found in the rivers of Germany, Hungary, Russia, &c., and in the lake of Haarlem. This or other species of the same genus are met with in the Nile, the Danube, the Orontes, and some of the rivers of Asia Minor.
Use. It contains a large quantity of fat, which has been used in place of lard. It yields isinglass,—the kind known in commerce as the *Samovey isinglass* is said to be obtained from it by the Russians.

SILURUS PARKERII. (Trail.) *The Geelbrick*, or *Gilbricker.*
Description. About three feet in length, and weighing from twenty to thirty pounds. The upper parts are of a fine olive-green, and the sides and belly of a rich yellow, hence it is sometimes called "*Yellow belly.*"
Hab. The muddy waters of the rivers of Guiana.
Use. Esteemed as an article of food. The dried air-bladder is the isinglass of Demerara, and probably constitutes at least a part of the *Brazilian isinglass* of commerce. The dried ovaries have been imported into London, and described as *False isinglass*, but they possess none of the properties of isinglass.

ORDER 3. MALACOPTERYGII SUB-BRACHII.

Char. Ventrals inserted under the pectorals; the pelvis directly suspended to the bones of the shoulder; it contains almost as many families as genera. The first family or *Gadoides*, i. e. the *Cod family*, contains the cod, whiting, hake, ling, &c.; the second family, the *Plani*, or flat-fish, contains the flounder, halibut, brill, &c. &c.

GADUS ŒGLEFINUS. (Linn.) *The Haddock.*
Hab. Northern seas.
Use. The flesh is split and dried.

GADUS BROSME. (Gm.) *The Forsk.* (One fin on the back.)
Hab. Does not come down lower than the Orkneys.
Use. This fish is salted and dried; when merely split and dried, it goes by the name of *stock-fish.*

GADUS MERLANGUS. (Linn.) *The Common Whiting.*
Hab. Along the shores of the ocean. Very abundant.
Use. Esteemed as a light food, and easy of digestion.

GADUS MOLUA. (Linn.) *The Ling.*
Hab. Northern seas.
Use. A common article of food among the poor.

GADUS MORRHUA. (Linn.) *The Cod.*
Hab. The seas of the northern hemisphere, from the 40° to the 75°.
Food. Sand-eels, plaice, &c.

Use. The flesh used as food. The oil obtained from the liver (*Cod-liver oil*) has been administered with advantage in rheumatic and scrofulous affections.

Order 4. MALACOPTERYGII APODES.

These constitute one natural family, viz.,—the *Anguilliformes*, (*anguilla*, eel, and *forma*, form,) or the various species of the eel.

Gymnotus electricus. (Linn.) *The Electric Eel.*

So called from its resemblance to an eel, and the electric power it possesses.

Description. About five or six feet in length; the head rather broad and depressed; the muzzle obtuse; the body compared with that of the common eel, stunted and shorter in proportion; the anterior part nearly cylindrical; the pectoral fins small and rounded; colour brownish black.

Hab. The rivers of South America.

Use, &c. This eel is said to communicate shocks so violent that men and even horses are overpowered by them. This power is dependent on the will of the animal, but decreases, if frequently repeated, unless at considerable intervals.

Muræna anguilla. (Linn.) *The Eel.*

Hab. Almost everywhere.

Food. Frogs, worms, fishes, roots, herbs, &c.

Use. Laxative. Are not considered wholesome. "The fat is considered good against stripes." It is among the simples of the Lond. Pharm. 1618.

Muræna conger. (Linn.) *The Conger Eel.*

Hab. It is found in all our seas.

Use. It is not much esteemed at table when fresh; the flesh is salted, and the fat which runs out is collected.

Order 5. LOPHOBRANCHII. (Tufted gills, λοφος, a tuft.)

Char. Gills in tufts; operculum fixed by a membrane which only affords a small aperture for the escape of the water.

There are two genera, Scil. *Syngnathus* (Linn.), or Sea Eels; and *Pegasus* (Linn.)

Order 6. PLECTOGNATHI. (Cheeks united by suture, πλεκτω, to weave, and γναθος, cheek.)

Char. Maxillary fixed to the intermaxillary bones, and the palatal to the cranial. Opercula covered in.

This order comprises two very natural families, characterised by their mode of dentition. 1st. The *Gymnodentes*, (naked teeth, γυμνος, naked, and ὀδους, tooth.) 2nd. *Sclerodermata*, (rough-skinned, σκληρος, hard, and δερμα, skin.)

Diodon atinga. (Bl.)

Use. Sounds are made into isinglass; gall poisonous.

TETRAODON LINEATUS. (Linn.)

Hab. The Nile.

Use. The flesh is said to be poisonous. Some species of the Tetraodon are said to be electrical.

SECOND SERIES OF FISHES. CHONDROPTERYGII.

This series is divided into *Eleutherobranchii*, whose branchiæ are free, (ἐλευθερος, free,) and the *Pectobranchii*, those whose branchiæ are fixed, (πηκτος, fixed.) To the former belong the following species: Scil. the *Acipenser Sturio*, L., or common sturgeon; the *Chimæra Monstrosa*, L., king of the herrings, &c. To the latter belong the several species of shark, the saw-fish, the torpedo, the lamprey.

ORDER 7. ELEUTHEROBRANCHII. (*Free Branchiæ.*)

ACIPENSER.* (Linn.) *The Sturgeons.*

Gen. char. Body furnished with osseous bucklers implanted on the skin in longitudinal ranges. Their head cuirassed in the same manner externally; their mouth, placed under the muzzle, is small, and devoid of teeth; the palatine bone is cemented to the maxillaries, and we find the intermaxillaries in the rudimentary state, in the thickness of the lips; supported on a pedicle with three articulations, the mouth is more protracted than that of the squali; their eyes and nostrils are at the sides of the head; some barbels depend from the muzzle. The labyrinth is entire in the bone of the cranium; but there is no vestige of an external ear. The dorsal is behind the ventrals, and the anal is under it. The caudal surrounds the extremity of the spine, and has a salient tube underneath, shorter, however, than its principal point. Internally we find the spiral valve of the intestine and the pancreas united into a mass; but there is, moreover, a very large natatory bladder, communicating by a wide hole with the œsophagus.

The sturgeons ascend in abundance from the sea into certain rivers, where they constitute very profitable fisheries. Most of their species have well-flavoured flesh. Caviare is made of their eggs, and isinglass of their natatory bladder.

ACIPENSER HUSO. (Linn.) *The Large Sturgeon.*

Description. Bucklers more blunt, muzzle and barbels shorter than in the ordinary sturgeon; the skin also is smoother. It often attains a length of from twelve to sixteen feet, and a weight of more than 1200 pounds.

Hab. The Caspian Sea, and the rivers which empty themselves into it, as the Wolga.

Food. Sea birds and small seals are often found in the stomach.

* The origin of this term is uncertain, and the mode of spelling it is twofold, *Acipenser* and *Accipenser*. The more correct mode, however, is with one *c*, as appears from a verse in LUCILIUS, in Cic. de Fin. l. 2: *Consumis squilla atque Acipensere cum decumano.* Martial also, xiii. 91, *Ad Palatinas Acipensera mittito mensas.* Some write *Aquipenser*.

Use. The roe is prepared to form the substance called *caviare.* The flesh is not considered so good as that of some other species. The best *isinglass* is said to be obtained from the swimming-bladder of this species.

ACIPENSER GULDENSTADTII.

Under this head two varieties are found. In the one, the osseous skin-scales, together with the bucklers and radiated streaks, as well as all the cutaneous scales, are very much developed; it accordingly appears rough, and bears the name of *Kostera.*

The other has the skin-scales less developed, so that on a superficial examination, when the skin is much covered with mucus, it seems to be almost smooth, though it feels rough. A specific difference between them is not to be found.

ACIPENSER RUTHENUS. (Linn.) *A. Pygmæus.* (Pall.) *The Sterlet,* or *Small Sturgeon.*

Description. This is supposed to have been the *Elops,* and *Acipenser,* so celebrated among the ancients. It seldom exceeds two feet in length.

Hab. The Black and Caspian Seas and their tributary rivers, and the Arctic Ocean.

Use. The flesh of this species is much esteemed; and the *caviare* obtained from it is reserved for the court. The swimming-bladder yields *isinglass.*

ACIPENSER STELLATUS. (Bl.) *A. helops.* (Pall.)

Description. Attains a length of four feet. The snout is longer and smaller than that of the other species, and the bucklers more bristled.

Hab. The Caspian and Black Seas and their tributary rivers, where it is exceedingly abundant.

Use. Yields *caviare* and *isinglass.* The flesh is not so good as that of the common sturgeon.

ACIPENSER STURIO. (Linn.) *The Common Sturgeon.*

Description. The body is elongated and angular; defended by indurated plates and spines, arranged in longitudinal rows; the snout is pointed; the mouth small, on the under side of the head, and without teeth. This species usually attains to a length of six or seven feet.

Hab. The Caspian and Black Seas and their tributary rivers, but it is found on our coasts, and has been caught in the river Thames.

Use. The flesh is considered to resemble veal. It is pickled in brine, or sliced and frozen, (*runkel.*) The sounds are made into a kind of isinglass; the back-bone, which is soft, is preserved by smoking, (*chinolia. spinachia.*) The roe is made into *caviare;* the skin is dressed for leather; that of the young fish is transparent, and sometimes used for covering windows.

Several species of sturgeon are found in the lakes, rivers, and seas of North America, which are peculiar to that country. Among these are the *Acipenser oxyrhyncus, Acipenser brevirostris, Acipenser rubi-*

cundus, which very much resembles the *sterlet;* and the *Acipenser maculosus*, which resembles the *common sturgeon.*

Order 8. PECTOBRANCHII. (*Fixed branchiæ.*)

Petromyzon branchialis. (Linn.) *Pride, Lampern.*
This is employed as a bait for fishing-hooks.

Petromyzon fluviatilis. (Linn.) *The River Lamprey.*
Hab. This is found in fresh water.

Petromyzon marinus. (Linn.) *The Great* or *Sea Lamprey.*
Hab. This fish ascends in the spring as far as the mouths of rivers. It is much esteemed as a delicacy for the table. Its flesh, however, is very difficult of digestion. It is glutinous, and is preserved—*potted lampreys*—by high seasoning. It was by indulging in this dish to excess that Henry I. lost his life.

Raia batis. (Linn.) *The Skate. Blue Skate. Grey Skate.*

Raia clavata. (Linn.) *The Thornback.*

Raia oxyrinchus. (*Raia rhinobatus.* Linn.?) *White Skate.*
Use. The flesh of these different varieties of Raia is nutritive; it is generally salted, and dried for exportation.

Raia sephen. *Rousette.*
Skin dressed, (*galuchat, fish skin,*) transparent, used to cover boxes, cemented on green-stained paper, the tubercles filed down, polished, and the skin stained with verdigris; spots, circular, large, very beautiful.

Raia tuberculata. *Shagreen Ray.*
The skin dried (*shark's skin, shagreen*) is used to cover boxes.

Squalus catulus (et sq. stellaris,) (Linn.,) the male; and Squalus canicula, (Linn.,) the female. *The Spotted Dog-fish*, or *Rough-hound;* the *Chien de mer* of the French.
Use. The skin dressed (*shark-skin*), rough, used for polishing wood and ivory.

Squalus carcharias. (Linn.) Sometimes called *Canis marinus*, or *Sea-dog. The White Shark.* The French call it *Requiem*, from its proving so destructive to man.
Hab. All seas indiscriminately.
Use. The flesh, though eaten sometimes, is not good; the liver is pressed for the oil. The teeth have been used to rub children's gums with, to make their teeth cut.

Squalus galens. (Linn.) *Melandre.*

Squalus spinax. (Acanthias. Linn.)
The skins of these are dried, and used either as fish-skin for covering, or for polishing wood.

Torpedo galvanii. (Riss.) *The Cramp-fish.*
Hab. In the Nile and muddy parts of the sea.
Food. Fishes.

Use. Aperient when eaten. According to Dioscorides, being applied to the head it relieves pain. This and other species of the same genus have the property of communicating an electric shock when touched.

Second Division of the Animal Kingdom.

MOLLUSCA (Cuv.)—SOFT ANIMALS.

Heterogangliata. (Owen.) *Cyclogangliata.* (Grant.)

The *Mollusca* have neither an articulated skeleton, nor a vertebral canal. Their nervous system is not united in a spinal marrow, but merely in a certain number of medullary masses dispersed in different points of the body, the chief of which, termed the brain, is situated transversely on the œsophagus, and envelops it with a nervous collar. Some of them respire elastic air, others salt or fresh water. The circulation in them is always double; that is, their pulmonary circulation describes a separate and distinct circle. The blood of the Mollusca is white or bluish. Their muscles are attached to various points of their skin. Their motions consist of various contractions, which produce inflexions and prolongations of the several parts, or a relaxation of the same, by means of which they swim, creep, and seize on various objects. Their irritability is in general very great, and remains for a long time after they are divided. Nearly all the Mollusca have a development of skin which covers their body, more or less resembling a *mantle.* The NAKED MOLLUSCA are those in which the mantle is merely membranous. When the substance constituting the mantle becomes so much developed that the contracted animal finds a shelter beneath it, it is then termed a *shell,* and the animal is said to be TESTACEOUS.

The MOLLUSCA are divided into six classes.

MOLLUSCA . .
1. CEPHALOPODA, (κεφαλη, head, πους, food, from their crawling by means of appendages on the head.)
2. PTEROPODA, (πτερον, a fin, the organs of locomotion being fins attached to the neck.)
3. GASTEROPODA, (γαστηρ, belly, from their crawling by means of a fleshy disc on the belly.)
4. ACEPHALA, (α priv., κεφαλη, head; having no apparent head.)
5. BRACHIOPODA, (brachium, an arm, having fleshy or membraneous arms.)
6. CIRRHOPODA, (cirrus, from the abdomen being furnished with filaments named cirri, or ciliated articulations, corresponding to feet, or fins.)

CLASS I. CEPHALOPODA. (Class V. of General Division.)

This class of animals, which contains but one order having the same name, includes six genera. These animals are remarkable for a peculiar and intensely-black secretion, with which they darken the surrounding water when they wish to conceal themselves.

Sepia elegans. (Blainville.)
Hab. The coasts of Sicily, where it is called *Sepia mezzana.*
Use. Yields part of the cuttle-fish bone of commerce.

Sepia loligo. (Linn.) *Calamary. Anchor-fish. Poor Cuttle.*
The flesh well washed, after the ink has been let out, is white, and being dressed has the taste of veal.

Sepia officinalis. (Linn.) *Cuttle-fish.*
Hab. Found in all our seas.
Food. Small fishes and crustacea.
Use. The bone, *os sepiæ*, is sometimes given to calves as an astringent. It is often used in tooth-powders; for polishing metals, and to make moulds for casting small gold and silver work, as it takes a good impression from the pattern. The fluid contained in the *ink-bag* is used as a pigment.

CLASS II. PTEROPODA. (Class VI. of General Division.)

In the animals of this class the organs of locomotion have the appearance of wings, or fins. These animals yield nothing to medicine.

CLASS III. GASTEROPODA. (Class VII. of General Division.)

This is a very numerous class of molluscous animals. They are either naked or testaceous. The class has been divided into eight orders—namely, 1. *Pulmonaria*, to which order belong the *Helix pomatia*, or snail, and the *Limax rufus*, or slug. 2. *Nudibranchiata*, to which belongs the genus *Doris*. 3. *Inferobranchiata*. 4. *Tectibranchiata*. 5. *Heteropoda*. 6. *Pectinibranchiata*, containing the genera *Purpura*, *Turbo*, and *Murex*. 7. *Scutibranchiata*, containing the *Haliotis*. 8. *Cyclobranchiata*.

Doris. (Linn. Cuv.) *Beche de Mer.*
Description. The anus opening on the posterior part of the back, and the branchiæ arranged around the anus, in the form of small sprouts, resembling altogether a kind of flower. The mouth is a small projection situate beneath the anterior edge of the mantle, and furnished with two small conical tentacula. Two other tentacula proceed from the superior and anterior part of the mantle. The organs of generation open near its right border. The stomach is membranous. A gland interlacing with the liver pours out a peculiar liquor through a

foramen situate near the anus. The species are very numerous, and they attain a considerable size.

Hab. They are found in all seas. Collected on the west coast of New Holland.

Use. When dried, they are used for making a rich soup.

HALIOTIS. (Linn.) *Sea-ear.* (ἁλς, sea, and ους, ear.)

Description. One of the most ornamented of Gasteropods. All round its foot to its mouth there is a double membrane cut out into leaflets and furnished with a double row of filaments. On the outside of its long tentacles are two cylindrical projections, for carrying the eyes. The mantle is deeply divided on the right side, and the water, which passes by means of holes in the shell, can, through this slit, penetrate into the branchial cavity. The mouth is a short proboscis.

The most common species is the *Haliotis tuberculata.* This there can be no doubt is the αγριαλεπας, ην τινες καλοῦσι θαλαττιον ους, "the wild *lepas*, which some call the *sea-ear*," of Aristotle, Hist. An. lib. iv. c. 4.

Hab. This is very common at Guernsey and Jersey.

Use. The flesh is pickled in vinegar, and very highly spiced, and is imported as food from Guernsey. The inhabitants of this place and Jersey ornament their houses with the shells, placing them so that their bright interior may catch the rays of the sun.

HELIX POMATIA. (Linn.) *Escargot. The Garden Snail.*

Description. Shell globular, of a reddish colour, marked with stripes of a somewhat paler colour. Aperture almost semicircular and oval. Border of the aperture a bluish, rose-red colour. Umbilicus covered.

Hab. England, France, Prussia, Denmark, and Sweden.

Food. Succulent plants.

Use. In some countries they are used for the preparation of snail-broth. Snails have been recommended in certain diseases of the lungs and air-tubes.

LIMAX. (Linn.) *The Slug.*

This animal belongs to the Terrestrial Pulmonaria, which genus is generally characterized by having four tentacula; such as have no apparent shell, form in the Linnæan system the genus LIMAX. To this belongs the

LIMAX RUFUS. (Linn.) *The Slug.*

This is to be met with at every step we take in wet weather; it is sometimes almost entirely black.

Use. The soup of this slug has been recommended in pulmonary affections.

MUREX. (Linn.)

Gen. char. Animal furnished with two long and approximated tentacles; mouth without jaws, but armed with hooked tentacles in lieu of a tongue; foot rounded, generally rather short; mantle large, often ornamented with rings on the right side only; branchiæ formed of two unequal pectinations; anus on the right side in the branchial cavity; orifice of the oviduct on the right side at the entrance of the same

cavity; orifice of the deferent canal at the end of the exciting organ, on the right side of the neck.

Shell, oval, oblong, more or less elevated on the spiral side, or prolonged forwards; external surface always interrupted by rows of varices in the form of spires, or simply tubercles, generally arranged in regular and constant order; aperture oval, terminated anteriorly by a straight canal, more or less elongated and closed: right tip often plaited or wrinkled. *Operculum* horny.

MUREX BRANDARIS.

Description. Shell subovate, surrounded with straight spines; beak moderately long, subulate, straight, and obliquely surrounded with spines.

Hab. It inhabits the Mediterranean and Adriatic seas; the shell is white, cinerous, or brownish, with a triple row of small spines, the third row shorter, rarely a single row, with the beak unarmed.

PURPURA. (Brugiere.) *Purple-fish.*

It is known by its flattened columella, which is trenchant near the end opposite to the spine, and which, with the external margin, forms a canal there, sunk in the shell, but not salient. The Purpuræ were scattered among the Buccinæ and Murices of Linnæus. The animal resembles that of a true Buccinum.

It has been usual to confound together the genera of the Murex and Purpura, and to use the words as synonymous; but though there is some general resemblance between many of the shells of the two genera, yet they are easily distinguished by this, that the mouth of the purpura is less long, and is less dentated and alated than that of the murex. The body and the head of the shells of this genus are not so elevated as those of the murex kind, and are not covered with points or buttons at the mouth. If a shell is therefore found to have a small, smooth, and round mouth, and a body covered with undulated leaves, and sometimes with long points, and its tail, whether long or short, be hollowed and somewhat bent, this may be called a purpura, and not a murex. Linnæus makes the purpura a species of murex.

Use. The purpura, as well as the murex, served among the ancients to afford the fine purple dye they were so fond of, and some of the Buccinæ (*e. g.* the *Lapillus* of Linnæus) have been of late found to possess the same property.

Hab. The purpura and murex are both fished up in great plenty in the Gulf of Tarentum, but the small quantity of the coloured juice which each fish contains, and the necessity of using it before the animal dies, render it impossible to make it a regular article of traffic. The ancients used this colour only on cotton and woollen stuffs; whereas our cochineal, which was unknown to the ancients, strikes equally well on silks and stuffs. These shells are also found in various parts of the Mediterranean. In the seas of the Spanish West Indies, about Nicoya, is found a shell-fish which perfectly resembles the ancient purpura, and is probably the very same. The purple dye is said to lie in the throat of the fish. On the coast of the South Sea,

near the equator, there are found certain sea-snails, sticking to the stones, which contain a liquor or juice having the true colour of purple. The modern purple fish is a kind of Buccinum, and it appears from Pliny, that part of the ancient purple was taken from this kind of shell-fish.

Food. The purpura lives on other fish. It usually hides itself at a small depth in the sand, and as it lies hid, it thrusts up a pointed tongue, which wounds and kills anything that comes near it.

TURBO. (Linn.)

This comprehends all the species with a completely and regularly turbinated shell and a round aperture. Lamarck has thus described the

TURBO, (properly so called.)

Description. Shell round or oval, and thick; the aperture completed on the side next the spire, by the penultimate whorl. The animal has two long tentacula, and the eyes placed on pedicles at their external base; the sides of the foot are provided with membranous wings, sometimes simple, at others fringed, and sometimes furnished with one or two filaments.

Use. The shelly operculum of one of the species of the genus *Turbo*—namely, *T.* pullus—called *Guernsey eye-stone*, when put into the corner of the eye, works its way out at the other corner, and brings out any substance with it that may have been accidentally introduced.

CLASS IV. ACEPHALA. (CLASS VIII. of General Division.)

The acephala have no apparent head, but a mere mouth, concealed in the bottom or between the folds of their mantle. The latter is almost always doubled in two, and encloses the body, as a book is clasped by its cover; but it frequently happens that, in consequence of the two lobes uniting, it forms a tube; sometimes it is closed at one end, and then it represents a sac. This mantle is generally provided with a calcareous bivalve, and sometimes multivalve shell, and in two genera only is it reduced to a cartilaginous, or even membranous nature. The brain is over the mouth. The branchiæ usually consist of large lamellæ covered with vascular meshes, under or between which passes the water. From these branchiæ the blood proceeds to the heart, generally unique.

All the acephala are aquatic.

CARDIUM EDULE. (Linn.) *The Cockle.*

A species of the genus *Cardium*, a name given to it from some resemblance of its figure to that of a heart.

Use. Flesh eaten raw or dressed; it is also pickled for sauce.

MYA MARGARITIFERA. (Linn.) *Pearl Mussel.*

This is a species of the genus *Unio;* the anterior tooth in it is more or less stout and unequal.

Hab. Found in fresh water in running streams in France.

Use. The mother-of-pearl of this large thick species is so beautiful, that its concretions are used in dress as pearls.

MYA PICTORUM. (Linn.)

This is also a species of the genus *Unio*. It is an oblong and thin species, known to every one.

Use. Shells—*colour shells*—used to spread colours upon.

MYTILUS EDULIS. (Linn.) *Common Mussel.*

Hab. The common mussel is frequently seen suspended in extended clusters, along the whole coast of France, to rocks, piles, &c.

Use. It forms a considerable item of food; but is dangerous if eaten to excess.

MYTILUS MARGARITIFERUS. (Linn.) *The Pearl Mussel.*

This is a species of the genus *Avicula* of Brugiere. It has nearly a semicircular shell, greenish without, and ornamented with the most beautiful nacre within.

Use. The nacre is employed in the arts, and it is from the extravasation of this substance that the oriental or fine pearls are produced, taken by the divers at Ceylon, in the Persian Gulf, &c.

MYTILUS HIRUNDO. (Linn.)

This is a species of *Avicula* of Brugiere. It is remarkable for the pointed ears which extend its hinge on each side. Its byssus is coarse and stout, resembling a little tree.

Hab. The Mediterranean.

OSTREA EDULIS. (Linn.) *The Common Oyster.*

Linnæan definition of the genus Ostrea. Animal tethys. Shell bivalve, inequivalve, subaurited. Hinge edentulous, with a hollow, ovate, little excavation, and lateral transverse striæ.

The *true oysters* have been divided into two groups:—

A. True oysters with simple or undulated, but not plaited, valves.

B. True oysters with the borders of their valves distinctly plaited.

A. This considerable group, which consists of between thirty and forty recorded species, (recent,) may be illustrated by the well-known *Ostrea edulis*, or *common edible oyster* of the European seas. These are the *Ostræ* of the ancient Italians; *Ostras* of the Spaniards; *Austern* of the Germans; and *Huitres* of the French. The Roman epicure well knew the value of the British oyster. (Juv. iv. 140.) There are gradations, however, in the quality of the British oyster, the animal varying much, both in size and flavour, according to the nature of the coast, and the food with which the locality is furnished. The oysters on the south coast are generally very well flavoured; the best being found at Purfleet, and the worst at Liverpool. Colchester and other places in Essex are the great nurseries or feeding-grounds for supplying the metropolis; and indeed, in a great measure, England generally.

Food. The favourite food of the oyster consists of a green *navicula* (*Vibrio naviculariis*,) and various species of that and other genera of *Infusoria;* these make the oyster fat, tender, and peculiarly well-flavoured.

Use. Flesh eaten raw, or dressed, also pickled in vinegar and brine. The shells, exposed to the air for months to bleach, (*testæ ostreorum*,) used in medicine as an absorbent.

PECTEN MAXIMUS. (Brug.) *Ostrea maxima.* (Linn.) *The Scollop.*

The scollops found on the French coast have convex valves, one whitish and the other reddish, each having fourteen ribs, broad and longitudinally striated.

Use. The flesh, when dressed, is eaten. They are also pickled in vinegar.

PINNA. (Linn.)

Gen. char. Two equal valves forming a segment of a circle, or resembling a half-opened fan, closely united by a ligament along one of their sides.

PINNA NOBILIS. (Linn.)

This species is distinguished by the valves being roughened, with recurved and semitabular plates. It remains half buried in the sand, and anchored by its byssus.

Use. The byssus, which is extremely fine and brilliant, is used as silk for fabricating the most costly stuffs. It also produces pearls of considerable size, but tinged with brown.

CLASS V. BRANCHIOPODA. (CLASS IX. of General Division.)

These, like the acephala, have a bilobed mantle, which is always open. Instead of feet, they are provided with two fleshy arms. The mouth is between the bases of the arms. All the branchiopoda are invested with bivalve shells, fixed and immovable.

CLASS VI. CIRRHOPODA. (CLASS X. of General Division.)

The cirrhopoda, in several points of view, are intermediate between this division and that of the articulata. Enveloped by a mantle, and testaceous pieces which frequently resemble those seen in several of the acephala, their mouths are furnished with lateral jaws, and the abdomen with filaments called cirrhi, arranged in pairs composed of a multitude of little ciliated articulations, and corresponding to a sort of feet or fins similar to those observed under the tail of several of the crustacea. Their heart is situated in the dorsal region, and the branchiæ on the sides; the nervous system forms a series of ganglions on the abdomen. The position of these animals in the shell is such that the mouth is at the bottom and the cirrhi near the orifice. These animals are always fixed. Linnæus comprised them all in one genus, LEPOS. Brugiere has divided them into two.

Third Division of the Animal Kingdom.

ARTICULATA. (Cuv.) ARTICULATED ANIMALS.

Homogangliata. (Owen.) *Diploneura.* (Grant.) *Annulosa.* (Macleay.)

This, the third general form, is as well characterized as that of the vertebrata; the skeleton is not internal, as in the latter; the articulated rings which encircle the body, and frequently the limbs, supply the place of it, and as they are usually hard, they furnish to the powers of motion all requisite points of support; so that here, as among the vertebrata, we find the walk, the run, the leap, natation, and flight. This great division is divided into four classes.

1. Annelida, (Lam.,) or worms with red blood. (Cuv.) 2. Crustacea. 3. Arachnida. 4. Insecta.

CLASS I. ANNELIDA. (Class XI. of General Division.)

Char. Body soft, elongated, articulated, or divided into segments or transverse folds.

The annelida are divided into three orders—viz.

1. Tubicola. 2. Dorsibranchiata. 3. Abranchiata.

Order 1. TUBICOLA.

Dentalum. (Linn.) *Dog-like tooth shell.*

This is a pipe of about three inches long, thick at one end, and small at the other. This pipe is of a greenish, shining white; is hollow, light, of the size of a quill at the thick end, and smaller by degrees to the other end. It was used in medicine as an absorbent. (See Pomet.)

Order 3. ABRANCHIATA.

Lumbricus terrestris. (Linn.) *Earth-worm.*

Hab. Almost everywhere.

Food. Earth.

Use. According to Pliny, the ashes of earth-worms with oil preserve hair from hoariness. According to the same authority, drank with wine they are beneficial in breaking vesical calculi. Various other virtues have been assigned to them.

Hæmopis sanguisorba. (Sav., Moq. Tand.) *Hirudo sanguisuga.* (Linn.) *The Horse Leech.*

This is usually larger than the ordinary medicinal leech; the colour is, above, of a greenish black; beneath, greenish, cinerous with black spots. The teeth are blunt, flattened, and fewer in number than those of the medicinal leech, and they are incapable of penetrating the human skin. They are said to produce troublesome wounds where

they have attempted to puncture the skin. They are found throughout Europe in ponds.

SANGUISUGA CHLOROGASTER, (Brandt,) sometimes met with among the speckled leeches from Russia. Back coloured as the preceding. Belly brighter green tint, speckled with small brownish-red spots.

SANGUISUGA INTERRUPTA. (Moq. Tand., Brandt.) *Sangsue interrompue.* (Audonin.) *Sangsue marquetee.* (Bl.) *The interrupted Gibraltar green,* or *Morocco leech.*

Char. Back of a beautiful pea or grass green; sometimes in the smaller varieties it has an ochre or brownish tint. The two marginal bands yellow, broad, and well-marked; the dorsal interrupted. Belly generally of a duller green. These leeches are collected in Morocco, and exported by way of Gibraltar.

SANGUISUGU MARGINATA. (Letheby.)

Char. Back and belly almost black, or very dark green, with no spots, but having a bright yellow or orange marginal band running the full length of each side of the body.

SANGUISUGA MEDICINALIS. (Sav., Moq. Tand., Brandt.) *Hirudo medicinalis.* (Linn., Mull., Cuv., Car., Johnson.) *Sangsue medicinale grise.* (Bl.) *Hirudo officinalis.* (Derh.) *Old English,* or *speckled leech. Hamburg grey,* or *Russian leech.*

Char. Back dark olive, sometimes almost black or brown, with six orange or rusty yellow longitudinal bands—two marginal, and four dorsal. Belly dirty yellowish, or light olive green, spotted more or less with black. This is the most valuable of the commercial leeches. It is imported, by way of Hamburg, from the northern countries of Europe, as Russia, Norway, Sweden, &c.; it was formerly to be obtained in England, but from the great demand, and the destruction of its haunts, it is now nearly extinct.

SANGUISUGA OBSCURA. (Moq. Tand.) *Sangsue noire.* (Bl.)

Char. Back either dark rusty brown, or black, with the central dorsal bands very indistinct. The two lateral bands orange yellow. Belly greenish, spotted, or not spotted.

This is frequently met with among the Spanish and French green leeches.

SANGUISUGA OFFICINALIS. (Sav., Moq. Tand., Brandt.) *Sanguisuga medicinalis.* (Risso.) *Sangsue medicinale verte.* (Bl.) *Hirudo officinalis.* (Geiger.) *Hirudo provincialis.* (Carena.) *Hamburg and French green leech.*

Char. Back brownish olive green, with six yellow or reddish longitudinal bands. Belly light dirty pea-green, or yellowish-green, free from spots, but exhibiting the two lateral stripes. There are two varieties of this species in commerce, one being collected in the central parts of Europe, and called the *German,* or *Hamburg green;* it is the largest and best. The other variety is collected in the more northern countries, and is known as the *French* or *Spanish green;* they are of less value, are of small size, and very unhealthy, from a fraud which the natives are guilty of before exporting them—that is, of

filling them with blood, so as to improve their appearance, and make them look larger; they are consequently very indisposed to bite, and must be kept some time before they are saleable.

SANGUISUGA VERBANA. (Moq. Tand., Brandt, Carena.) *Sanguisuga cavena.* (Risso.) *Sangsue medicinale de verbano.* (Bl.) *Sangsue de sac majeur.* (Audonin.)

Char. Back deep dirty green, with the two lateral or marginal bands rusty yellow; along the middle of the back there is a double row of longitudinal ochre yellow stripes, each stripe running for the space of three rings; the back also exhibits a series of black transverse bands, which occur about every sixth ring. Belly brownish-green, either without spots, or with very small ones. This leech is common in some of the Italian lakes.

CLASS II. CRUSTACEA. (CLASS XII. of General Division.)

The crustacea are articulated animals, with articulated feet, respiring by means of branchiæ, protected in some by the borders of a shell, and external in others. Their circulation is double. Their envelope is usually solid, and more or less calcareous.

CANCER ASTACUS. (Linn.) *Astacus fluviatilis.* (Fabr.) *The Crawfish. The River Crawfish*, or *Cray-fish.*

The crawfish is found in the rivers of Europe, especially those having a clayey bottom. It sometimes, although very rarely, attains the size of a small lobster, but usually does not exceed four or five inches in length. The colour, when alive, is olivaceous, or dark brown.

The concretions, commonly called *crab's eyes*, or *crab's stones*, (*Lapilli cancrorum*,) are found in the stomach of this animal, about the period at which it changes its shell. These concretions are white, and resemble in appearance small mushrooms. They vary in size from a quarter to five eighths of an inch in diameter, and consist of carbonate, with a little phosphate of lime and animal matter. *Crab's eyes* are said to be procured in the greatest abundance at Astracan. They were formerly used as absorbents and antacids.

CANCER GAMMARUS. (Linn.) *Astacus marinus.* (Fabr.) *The Lobster.*

The lobster is met with in the European ocean, the Mediterranean, and on the coasts of America. Its flesh is esteemed as an article of food.

CANCER PAGURUS. (Linn.) *The common* or *black-clawed Crab.*

Char. Shell, granulated with nine folds on each side; front with three lobes; apex of the hand black.

The crab occurs in great abundance during the summer months on all our rocky coasts, especially where the water is deep. It is considered to be in season between Christmas and Easter. The tips of the claws, and crustaceous covering, when reduced to powder, have been used as an absorbent and antacid.

ONISCUS ARMADILLO. (Linn., Gmel.) *Armadillo vulgaris.* (Lat.) *Cloporte armadillo.* (Geoff.) *Millepedes, common armadillo,* or *Pill millepede.*

This animal is commonly met with amongst moss, and under stones. Its length is rather more than half an inch. The body is elongate-ovate, somewhat convex above, smooth, and consist of ten crustaceous semicircular scales, or segments of a cinerous lead colour; the posterior margin of the segments are whitish. It has seven pairs of very short legs, each terminated by a minute horny claw. When touched, it rolls itself up into a ball, like the singular quadrupeds called Armadillos.

Millepedes are prepared by exposing them to the vapour of hot alcohol, which kills them. In this state they are always contracted into the globular form, and are thus distinguished from wood-lice, which have sometimes been confounded with them.

They were formerly administered in medicine, and considered to be expectorant, aperient, and diuretic.

ONISCUS ASELLUS. (Gmel.) *Oniscus murarius.* (Fabr.) *Cloporte ordinaire.* (Geoff.) *The Wood-louse, Sow-louse, Church-louse, Pig's-louse,* or *Carpenter.*

The French name, *Cloporte*, applied to this and the preceding species, is abbreviated from *Clous-à-porte.* The wood-louse is met with throughout Europe, in rotten wood and old walls. It is somewhat larger than the millepede, being about three-fourths of an inch in length. The body is oval, with crustaceous imbricate segments, rough above, and of a livid brown, or dirty ash-colour; the sides are yellowish, and the belly nearly white. The body is not capable of contracting into a ball.

CLASS III. ARACHNIDA. (CLASS XIII. of General Division.)

The *Arachnida*, comprising the third class of articulated animals, provided with moveable feet, are, as well as the crustacea, deprived of wings, are not subject to changes of form, or do not experience any metamorphosis, simply casting their skins. They differ from the crustacea, as well as from insects, in several particulars. Like the latter, the surface of their body presents apertures called *stigmata*, for the introduction of air. Respiration is effected either by air-branchiæ, or by radiated tracheæ. Most of the Arachnida feed on insects, which they either seize alive, or to which they adhere, abstracting their fluids by suction. Others are parasitical, and live on vertebrated animals. Some are found in flour, cheese, and in various vegetables. The Arachnida are divided into two orders: 1. Pulmonaria. 2. Trachearia. The former have pulmonary sacs, a head with distinct vessels, and six or eight ocelli. The Trachearіæ respire by tracheæ, and have no organs of circulation, or if they have, the circulation is not complete.

ACARUS SCABIEI. *Sarcoptis hominis*, (Raspail.) *The Itch Acarus.* This little animal is thought by some to be the cause of the disease

called itch. It is found in the neighbourhood of the pustules on persons affected with this disease.

ARANEA DOMESTICA. (Linn.) *The common House Spider.*

Hab. Almost everywhere, in corners of houses, &c.

Food. Flies, wasps, &c.

Use. Pliny used the cobwebs of the house spider in the cure of epiphora. Theophrastus mentions it as a useful application for stopping hæmorrhages.

ARANEA TARENTULA. (Linn.) *Lycosa Tarentula.* (Latr.) *The common Tarentula.*

The bite of this spider has been described by travellers as being generally fatal, and curable only through the influence of music. It is a native of the south of Europe, and is generally found during winter in a deep hole formed in the declivity of small hillocks, but in the summer it keeps in the air and spins its web. It is one of the largest of the European spiders; the upper part of the body is of a greyish-brown colour; the margin of the thorax is grey, with a radiated dorsal line of the same colour; the anterior part of the dorsum of the abdomen is marked with triangular spots; the belly is of a fine deep saffron colour, with a transverse black band.

The name Tarentula is derived from Tarentum, (now Taranto,) in the kingdom of Naples, near which place they were supposed to be found in the greatest abundance.

SCORPIO AFER. (Linn.) *The Indian Scorpion.*

Hab. India, Persia, and some parts of Africa.

This is the largest and most formidable of the scorpion tribe, measuring eight or ten inches in length. It is much dreaded on account of the poisonous effects of its sting.

SCORPIO AMERICANUS. (Linn.) *The American Scorpion.*

Hab. South America, and Sierra Leone, in Africa.

SCORPIO AUSTRALIS. (Linn.) *The African Scorpion.*

An inhabitant of Africa; the body is brown; the legs reddish; the hands long, smooth, rufous, and furnished with filiform claws.

SCORPIO EUROPÆUS. (Latr.) *The European Scorpion.*

This species is met with in the south of Europe, especially in many parts of Italy. Much pain and inflammation are caused by its sting, but it is not considered dangerous.

SCORPIO MAURUS. (Linn.) *The Barbary Scorpion.*

An inhabitant of Barbary.

SCORPIO OCCITANUS. (Amor.) *The Yellow Scorpion.*

This is the animal with whose poison Redi and Maupertuis made their experiments. It is very common in Spain, under stones, in warm, sandy mountainous situations. It is rather a small species, of a pale-yellowish colour. The body is oblong, ovate, about an inch and a half in length, and divided into six or seven segments. The legs are eight in number, slightly hairy underneath, and terminated by two small curved claws.

Scorpions feed on worms, spiders, small insects, and even one another. All the species are natives of warmer climates than ours. They run quickly, bending their tails in the form of an arch over their back. They are ovo-viviparous, the body of a pregnant female exhibiting, when dissected, between forty and fifty young.

The poison of scorpions, though much more active, is said to resemble that of bees and wasps in many of its chemical characters.

CLASS IV. INSECTA, INSECTS. (Class XIV. of General Division.)

Insects form the most numerous class of all the animal kingdom. The bodies of this class of animals (with the exception of the *Myriapoda*) have been divided by naturalists into three parts: the head, which bears the antennæ, the eyes, and the mouth: the thorax or corslet, which bears the feet and the wings, when there are any; and the abdomen, which is suspended behind the thorax, and contains the principal viscera. Those insects which have wings do not receive them till they are of a certain age, and frequently pass through two forms, more or less different, before they assume that of the winged insect. In all their states of existence they respire by means of tracheæ, that is to say, by elastic vessels, which receive the air through stigmata, or external apertures in the sides of the body, and distribute it, by means of numberless ramifications, to all parts of the body. There is but a vestige of a heart perceptible, and this consists of a vessel which lies along the back, and which exhibits alternate contractions, but from which no branches can be discovered to go off; so that we must conclude that the nutrition of the parts is carried on by imbibition. It is probably this sort of nutrition which induced the necessity of that kind of respiration peculiar to insects, because the nutritious fluid which was not contained in vessels, not being capable of being directed towards pulmonary organs so circumscribed as to receive the air, the air must be diffused throughout the entire body, in order to act on this fluid. It is for this reason that insects have no excretory glands, but only long spongy vessels, which appear to absorb through their great extent of surface, from the mass of the nutritious fluid, the peculiar juices which they are to produce.

The class of insects has been divided into twelve orders:—

The three first are composed of *apterous* insects, (*α* priv., and *πτερον*, wing,) undergoing no essential change of form or habits, but merely subject to simple changes of tegument, or to a kind of metamorphosis, which increases the number of legs, and that of the annuli of the body. The organ of sight in these animals is usually a mere assemblage, more or less considerable, of ocelli resembling granules.

The first order, the Myriapoda, (*μυριοι*, ten thousand, and *πους*, a foot,) has more than six feet—twenty-four and upwards—arranged along the whole length of the body, on a suite of annuli, each of which

bears one or two pairs, and of which the first, and in several instances, even the second, seem to form a part of the mouth. They are apterous. In the *second*, or the THYSANOURA, (θυσανοι, fringe, and ουρα, a tail,) there are six legs, and the abdomen is furnished on its sides with moveable parts, in the form of false feet, or terminated by appendages fitted for leaping. In the *third*, or the PARASITA, (παρα, and σιτον, food, or corn,) we find six legs, no wings, and no other organs of sight than ocelli; the mouth, in a great measure, is internal, and consists of a snout, containing a retractile sucker, or in a slit between two lips, with two hooked mandibles. In the *fourth*, or the SUCTORIA, (*sugo*, to suck,) there are six legs, but no wings; the mouth is composed of a sucker enclosed in a cylindrical sheath, formed of two articulated portions. In the *fifth*, or the COLEOPTERA, (κολεος, sheath, and πτερον, a wing,) there are six legs, and four wings, the two superior of which have the form of cases, and mandibles and maxilla for mastication; the inferior wings are simply folded cross-wise, and the cases, always horizontal, are crustaceous. They experience a complete metamorphosis. In the *sixth*, or the ORTHOPTERA, (ορθος, straight, and πτερον, wing,) there are six legs, four wings, the two superior in the form of cases, and mandibles and jaws for mastication, covered at the extremity by a *galea;* the inferior wings are folded in two directions, or simply in their length, and the inner margins of the cases, usually coriaceous, are crossed. They only experience a semi-metamorphosis. In the *seventh*, or the HEMIPTERA, (ημι, half, and πτερον, a wing,) there are six legs, and four wings, the two superior in the form of crustaceous cases, with membraneous extremities, or similar to the inferior, but larger and firmer, the mandibles and jaws are replaced by setæ forming a sucker, enclosed in a sheath, composed of one articulated, cylindrical, or conical piece, in the form of a rostrum. In the *eighth*, or the NEUROPTERA, (νευρον, nerve, or view, and πτερον, a wing,) there are six legs, four membraneous and naked wings, and mandibles and jaws for mastication; the wings are firmly reticulated, and the inferior are usually as large as the superior, or more extended in one of their diameters. In the *ninth*, or HYMENOPTERA, there are six feet, and four membraneous and naked wings, and mandibles and jaws for mastication; the inferior wings are smaller than the others, and the abdomen of the female is almost always terminated by a terebra, or sting. In the *tenth*, or LEPIDOPTERA, (λεπις, scale, and πτερον,) there are six legs, four membraneous wings, covered with small coloured scales resembling dust; a horny production in the form of an epaulette, and directed backwards, is inserted before each upper wing, and the jaws are replaced by two united tubular filaments, forming a kind of spirally-convoluted tongue. In the *eleventh*, or the RHIPIPTERA, (ριπις, a fan, &c.,) there are six legs, two membraneous wings, folded like a fan, and two crustaceous moveable bodies, resembling little elytra, situated at the anterior extremity of the thorax; the organs of manducation are simple, setareous jaws, with two palpi. In the *twelfth*, or the DIPTERA, (δις, two, and πτερον,) there are six legs, two membraneous extended wings, accompanied in most of them by two moveable bodies, or halteres, placed behind

them ; the organs of manducation are a sucker, composed of a variable number of setæ, enclosed in an articulated sheath, most frequently in the form of a proboscis, terminated by two lips.

Order 1. MYRIAPODA.

Scolopendra alternans. (Leach.) *Alternate Centipede.*

Description. Segments transverse, alternately longer and shorter. Hinder legs, with the first joint rounded, and internally spinulose.

Hab. Unknown.

Scolopendra gigas. (Leach.) *Gigantic Scolopendra.*

Description. Body, with the segments nearly equal. Length, eleven inches.

Hab. Unknown.

Scolopendra morsitans. (Linn.) *The Venomous,* or *Biting Centipede.*

Description. Body, with the segments elongate, or sub-elongate, irregular. Colour, yellowish-brown; feet, forty-two, with the first joint spinulose on the internal side. Usual length, nine or ten inches, but sometimes longer.

Hab. Asia, Africa, and America.

The *centipedes* are animals of a very formidable appearance, and in warm climates, where alone they are found, they are viewed with fear and disgust. They are armed with strong horny jaws, furnished, like the sting of a scorpion, with a small orifice, visible under a common lens. from which a poisonous fluid issues, capable of producing violent local inflammation, fever, and, it is said, even death. De Geer, Catesby, and other authors, however, assert that the bite of the *scolopendra*, although more painful than that of the *scorpion*, seldom proves fatal to man and the larger animals.

Order 3. PARASITA.

Pediculus humanus capitis. (De Geer.) *The Human-head Louse.*

Description. An oval, lobed, cinerous body, marked with an interrupted band on either side. It deposits single nits or eggs in the hair of the head, and does not spontaneously quit the scalp or its natural covering.

Pediculus humanis corporis. (De Geer.) *The Human-body Louse.*

Description. It is white and nearly immaculate ; it seldom appears on the head, but resides on the trunk of the body and on the garments. The nits are conglomerate, and usually deposited on the folds of linen and other articles of dress.

Pediculus pubis. (Linn.) *The Crab Louse.*

This parasite inhabits the eyebrows, pubes, &c., of men and women. It is distinguished by the cheliform structure of its legs, whence its name *crab-louse.* It frequently perforates the skin, and completely buries itself, so as to be with difficulty dislodged. In common with

the rest of the family, it is furnished with a mouth consisting of a tubulose very short haustellum, but it has no mandibles, properly so called.

Order 4. SUCTORIA.

Pulex irritans. (Linn.) *The Common Flea.*

This animal is too well known to require description. It lives on the blood of man and other animals, such as the dog, the cat, &c., on whose body it is frequently found.

Pulex penetrans. (Linn.) *The Chegoe.*

This is one of the most troublesome and noxious insects of the lower regions of South America and the West India Islands. It is furnished with a rostrum as long as the body. It often introduces itself into the skin, usually under the nails of the toes, where it deposits its eggs, and produces malignant and sometimes fatal ulcers. Waterton, in his "Wanderings in South America," says, in alluding to this insect, "It looks exactly like a small flea, and a stranger would take it for one."

Order 5. COLEOPTERA.

Cantharis albidus. (Latr.) *Lytta albida.* (Say.)

Description. Body black, entirely covered with dense prostrate greenish or yellowish-white hairs; head with a longitudinal impressed line; antennæ subglabrous, first and second joints rufous, the latter nearly equal in length to the first; length nearly one inch. An inhabitant of the United States of America.

Cantharis atomaria. Employed in the Brazils.

Cantharis atrata. (Latr.) (*Lytta atrata.* (Fabr.) *Black cantharis.*

Description. Entirely black, immaculate; length of male four lines; of female, five lines or more.

Hab. The United States of America and Barbary.

Cantharis cinerea. (Latr.) *Lytta cinerea.* (Fabr.) *Ash-coloured Cantharis.*

Description. Body black, covered with a cinerous down; length six lines.

Habitat. United States of America. It feeds on the leaves of the potato, English bean, wild indigo, and several other plants. It appears in July and August. Said to be equal, if not superior, as a vesicating agent, to any of the species of cantharis.

Cantharis gigas. *Lytta cærulea.* (Pfaff.) A native of Guinea and the East Indies.

Cantharis marginata. (Latr.) *Lytta marginata.* (Fabr.) *Marginated Cantharis.*

Description. Head, thorax, and abdomen black, but nearly covered with an ash-coloured down; elytra black, with margins and suture ash-coloured; upper part of the abdomen, under the wings, marked with two longitudinal lines of a bright clay colour; length about six lines.

Hab. Fabricius mentions this species as a native of the Cape of Good Hope. It is also found in the United States of America, on the leaves and flowers of different species of *Clematis*.

CANTHARIS NUTTALLII. (Latr.) *Lytta nuttallii.* (Say.)

Description. Body glabrous; head deep greenish, with a rufous spot on the front: antennæ robust, surpassing the base of the thorax, black; thorax golden green; feet black; thighs blue or purplish. Length nine-tenths of an inch.

Hab. The State of Missouri, North America, and seems to be limited to the western region of the State.

CANTHARIS RUFICEPS. A native of Sumatra and Java, and is said to possess extraordinary blistering properties.

CANTHARIS SYRIACA. *Lytta segetum.* Employed in Arabia, according to Förskal. (Pereira.)

CANTHARIS VIOLACEA. *Lytta gigas mas.* (Buchner.) A native of the East Indies.

CANTHARIS VITTATA. (Latr.) *Lytta vittata.* (Fabr.) *The Striped Cantharis*, or *Potato-fly.*

Description. Head light red, with vertical spots; antennæ black; thorax black, with three yellow lines; elytra black, with a central longitudinal fillet, and the whole margin yellow; abdomen and legs black, covered with a cinerous down. Length six lines.

Hab. The United States of America, principally the middle and southern States.

This species feeds principally on the wild potato plant, living in the soil about the roots of the plant, and ascending in the morning and afternoon, but avoiding the heat of the sun at noon. All the parts of this fly possess a vesicating property, and it is even said to be more certain in its effects than the common Spanish fly.

CANTHARIS VESICATORIA. (Latr.) *Melöe vesicatorius.* (Linn.) *Lytta vesicatoria.* (Fabricius.) *Blistering Beetle*, or *Spanish Fly.*

Gen. char. Antennæ elongate, simple, filiform. Maxillary palpi with terminal joint somewhat ovate. Head large, heart-shaped. Thorax small, rather quadrate, narrower than the elytra, which are as long as the abdomen. Wings two, ample. (Stephens.)

Sp. char. Bright glossy brass-green or bluish, glabrous; beneath more glossy, with a few hairs. Breast densely pubescent. Head and thorax with a longitudinal channel. Elytra with two slightly-raised lines. Tarsi violaceous. Antennæ black. (Stephens.)

Form elongated. Length six to eleven lines. Breadth one to two lines. Colour brass or copper green. Odour nauseous. Body covered with whitish-grey hairs, most numerous on the thorax. Head large, subcordate. Eyes lateral, dark brown. Thorax not larger than the head, narrowed at the base. Elytra from four to six lines long, and from three-fourths to one and a-half lines broad. Legs stout, from four to six lines long. Abdomen soft, broadest in the female.

Hab. Europe, originally; perhaps, the southern parts, as Italy and Spain; now, however, found in France, Germany, Hungary, Russia,

Siberia, and England. They are found on species of *oleaceæ*, and of *caprifoliaceæ*.

Food. The ash, rose, wild olive, corn, &c.

Cantharides should be kept in well-stopped bottles; by the addition of a few drops of strong acetic acid, they may be preserved from the attack of mites (*Acarus domesticus*). They are imported from St. Petersburg, and also from Messina, chiefly towards the close of the year. The cantharides from St. Petersburg are the largest and most esteemed.

MELOE MAJALIS. (Linn). *The True Mayworm.*

Description. Entirely black, glossy. The abdominal rings on the posterior brim generally present a rust-yellow margin.

Hab. Portugal, Spain, and the south of France.

Use. Its medicinal application is not satisfactorily established. (This must not be confounded with the *M. majalis* of Fabricius.)

MELOE VARIEGATUS. (Donav. Brit. Insect.)

Description. Green, with a purple-red and a golden lustre, sheath-wings rugose.

Hab. Germany, England, France, and Italy.

MELOE PROSCARABÆUS. (Linn.) *The Oil-beetle.*

Description. Bluish-black, with a violet and reddish-violet shade. Thorax somewhat elongated and quadrangular, considerably dotted. Sheath-wings leather-like and wrinkled.

Hab. Portugal, Spain, France, Germany, and as far as Sweden, Siberia, &c.

Uses, &c. This has been used for a considerable time in several countries as a medicine, as in several forms of gout, renal diseases, dropsy, also in syphilis, gonorrhœa, intermittent fever, and jaundice. Its action is that of an acrid diuretic, somewhat similar to that of cantharides.

MYLABRIS CICHORII. (Fabr.) *The Banded Mylabris, Meloe Cichorii.* (Linn.)

Description. About one inch and four lines in length. The sheath-wings black, each presenting anteriorly two almost quadrate, brownish-yellow spots; behind these, two brownish-yellow bands, each of which equals about one-sixth of the length of the sheath-wings.

Hab. The East Indies and China.

Use, &c. This insect, from its containing cantharidin, is used in the East for the same purpose for which we employ the Spanish fly. Dioscorides must have alluded to this animal, when he says, "The most efficacious cantharides are those of many colours, which have yellow transverse bands, with the body elongated, bulky, and fat; those of a single colour have no virtue." It is found on the flowers of the succory plant.

ORDER 7. HEMIPTERA.

CICADA ORNI. (Linn.) *Tettigonia orni.* (Fabr.) *Manna-producing Cicade.*

Hab. Italy, and especially Calabria.

This insect is found on the manna ash, by puncturing the leaves of which it causes the exudation of a sort of manna, called *Manna foliata*, or *Manna de fronde*. The insects, and also their larvæ, were formerly used by the Eastern nations as articles of food, for exciting the appetite, and also as a remedy for colic and affections of the urinary organs.

CIMEX LECTULARIUS. (Linn.) *The Bed-bug.*

Hab., &c. It is generally believed that the bug was first introduced to this country in the fir timber which was brought over for the purpose of rebuilding this metropolis after the great fire of 1666.

Food. Blood more particularly; they will also feed on dried paste, size, deal, beech, osier. It is said that they will not touch oak, walnut, cedar, or mahogany, but this is not true.

COCCINELLA BIPUNCTATA. (Linn.)

Description. Circumference of the body rather oval than round. The entire lateral edge of the corslet white. Sheath-wings mostly red, with two black points; rarely black, with four or six red spots. 1½—2½ lines in length.

Use. Employed for the yellow fluid in which it abounds.

COCCINELLA SEPTEMPUNCTATA. (Linn.) *The Common Ladybird.*

Description. Sheath-wings posteriorly entirely blunt, generally presenting seven dots. 3—3½ lines in length. Very finely dotted.

Hab. All over Europe.

Use. The same as that of cochineal in general.

COCCUS CACTI. (Linn.) *Cochineal.*

The cochineal insect is a native of Mexico; it feeds on various species of *Cactus* and the allied genera, especially the *Opuntia cochenillifera*. The insects are collected at different seasons. The product of the first collection, consisting of impregnated females, is best. They are killed by immersion in boiling water. They are imported into this country from Vera Cruz and Honduras. In this state the insect forms a roundish plano-convex body, rough and somewhat ringed on the back, weighing about one-tenth of a grain, and scarcely two lines in length. There are two sorts in commerce, the silver and the black cochineal. The silver is the most valued; it has a greyish-red colour, and the furrows of the rings are filled with a white bloom, which consists of a fine down.

Use. Used in medicine only as a colouring matter for giving a pleasing tint to other preparations. It is said to possess sedative or antispasmodic properties, and hence it has been sometimes employed in hooping-cough.

COCCUS ILICIS. (Linn.) *Kermes ilicis.* (Dumeril.) *The Kermes insect.*

This insect lives upon the leaves of the *Quercus ilex*. The dried bodies of the female insects of this species constitute the *Kermes grains*.

Hab. The south of Europe; the female has no wings, is of the size of a small pea, of a brownish-red colour, and is covered with a whitish

dust. The kermes have been employed from time immemorial in India to dye silk.

Coccus polonicus. (Linn.) *Cochineal of Poland.*

This is found upon the roots of the *Scleranthus perennis* and the *Scleranthus annuus*, in the sandy soils of Poland. It has been employed for the same purposes as the preceding. In Germany, during the 9th, 12th, 13th, and 14th centuries, the rural serfs were bound to deliver annually to the convents a certain quantity of kermes, the *Coccus polonicus*, which, from being collected on St. John's day with certain religious ceremonies, was called *Johannisblub.*

Coccus lacca. (Kerr.) *Coccus Ficus.* (Fabr.) *The Lac-insect.*

Description. Head and body uniformly continued; both together oval, compressed, consisting of twelve cross-rings. Abdomen flat. Antennæ filiform, obtuse, about one-half of the body giving off two or three diverging hairs. Tail, a small white point, sending off the horizontal hairs about the length of the body. Feet, half the length of the insect. About the size of a louse.

Hab. The East Indies. According to Kerr, the insect is to be found on both sides of the Ganges.

Food, &c. The animal lives on various trees, as the *Ficus religiosa* (Linn.); the *Ficus indica* (Linn.); the *Rammus jujuba;* the *Croton lacciferum;* and the *Butea frondosa*, which grow in Siam, Assam, Pegu, Bengal, and Malabar.

The male is about twice the size of the female, and has four wings; there is one to 5000 females. In November or December the young brood escapes from the eggs, lying beneath the dead body of the mother; they crawl about and fasten themselves to the bark of the shrubs. About this time the branches often swarm to such a degree with this insect, that they seem covered with a red dust. These insects produce small nipple-like incrustations on the twigs, their bodies being apparently glued by means of a transparent liquor, which goes on increasing to the end of March, so as to form a cellular texture. At this time the animal resembles a small oval bag, without life, of the size of cochineal. At first a beautiful red liquor only is perceived, afterwards eggs appear; and in October or November, when the red liquor gets exhausted, twenty or thirty young ones bore a hole through the back of their mother and come forth. The empty cells remain on the branches. The twigs, encrusted with the radiated cellular substance, constitute *stick-lac* of commerce. When the resinous concretion is taken off the twigs, coarsely pounded and triturated with water in a mortar, the greater part of the colouring matter is dissolved, and the remaining granular matter, dried in the sun, constitutes *seed-lac. Lac-dye* is the watery infusion of the ground stick-lac, evaporated to dryness, and formed into cakes.

Coccus sinensis. (Westwood.) *The Chinese white-wax insect.*

Hab. China.

Use. Produces the *Insect white-wax of China*, importations of which took place in 1846 and 1847. This wax, which was imported

in cakes about 13 inches in diameter, and 3½ inches in thickness, is a beautifully-white crystalline substance, without smell or taste. It has been used for making candles. The production of Chinese white-wax has been erroneously ascribed to *Cicada limbata*.

Family 9. Hymenoptera.

Apis indica. (Fabr.) *The Indian Bee.*

Description. Black, with a grey cinerous down, the first two segments of the abdomen, and the base of the third, reddish-brown.

Hab. Bengal, where, as well as at Pondicherry, it is cultivated.

Apis ligustica. (Spin.)

This species is very similar in appearance to our common hive-bee. It is a native of Italy and the islands of the Archipelago, where it is also cultivated.

Apis mellifica. (Linn.) *The Honey Bee*, or *Hive Bee.*

This species is common, in the wild state, in the forests of Russia, and in different parts of Asia, occupying cavities in trees and rocks. It is very rarely found wild in this country, and has therefore probably been domesticated at a very remote period, or introduced from abroad. It is very common in the woods of America, where it is supposed to have been carried in the sixteenth or seventeenth century.

The societies of bees include three kinds of individuals:—the neuters, or workers, forming the greater portion of the hive; the males, or drones, which are much less numerous; and the females, of which there is generally but one in each hive, known by the name of the *Queen Bee.* The neuters and the females are armed with a sting.

Apis unicolor. (Latr.) Inhabits the Isle of France and Madagascar. It is almost black, shining; the abdomen without spots or coloured bands. The honey obtained from this species is much esteemed.

Cynips. (Linn.)

Description. They appear, as it were, humped, having the head small, and thorax thick and raised. The abdomen is compressed, cavinated at its under part, and truncated obliquely at its extremity.

Cynips brandtii. (Ratzeburg.)

Ess. char. In the female the antennæ consists of only twelve joints, the third joint scarcely longer than the others, the last the longest. Posterior part of the body entirely black. Male not to be distinguished from that of the *Cynips Rosæ*, (which see).

Cynips gallæ tinctoriæ.

Diplolepis gallæ tinctoriæ. (Oliver.) *Cynips a la galle à teinture.* (Latr.) *Cynips quercûs infectoriæ.* (Nees ab. Es.)

Ess. char. 2⅛—3 lines in length, and when the wings are expanded 7—8 lines in breadth; a dirty yellowish-brown, only above, at the base of the back part of the body a shining blackish-brown. Areola of the upper wings very large and closed. Antennæ short, and of a brownish-yellow colour.

Hab. Asia Minor, Turkey in Europe, &c.

Food. These insects live on the oak, chiefly the *Quercus infectoria.*

CYNIPS ROSÆ. (Linn.) *Le Cynips du bedeguar.* (Latr.) *Diplolepis bediguaris.* (Geoffr.)

Ess. char. In the female the antennæ consist of fourteen joints; the third joint longer than the others. The hind-body reddish-yellow, black at the summit. Male entirely black, only from the third to the thirteenth joint of the antennæ, as also the haunches and the last tarsal joint brown.

Hab. The entire of Europe; very common throughout Germany. They live only on roses, and are found on the *Rosa canina*, the *Rosa villosa*, and the *Rosa sepium.*

FORMICA RUFA. (Linn.) *The Ant, Emmet, Pismire.*

Hab. Almost everywhere.

Food. Fruits, seeds, serpents, &c.

The ant, like the bee, is a social animal, and, as in the hive, three sexes are distinguished in an ant-nest—males, females, and mules. The latter alone labour, and take charge of the ova and young larvæ; they are destitute of wings. The males and females have wings, and do nothing but enjoy themselves; they copulate in the air, the males perish soon after, and the females deposit their ova in the ant-nest; but they do not live much longer than the males, for they perish at the approach of winter. The red ant contains a free acid in abundance. It also contains a resinous oil, acrid and odorous, which may be obtained, mixed with the acid, by means of alcohol; the resulting tincture is *Hoffman's Water of Magnanimity*, and has been supposed to possess aphrodisiac properties. The free acid of ants, or *formic acid*, has been taken by some chemists for acetic acid; but its particular and distinct nature was first ascertained by Arvidson and Oehrn. M. Doebereiner has shown that this acid is formed by a great number of reactions on organic principles, and more particularly by treating citric, or tartaric acid, sugar, starch, &c., with peroxide of manganese and sulphuric acid. This acid is hydrated, liquid, volatile, not crystallizable; the property which distinguishes it most readily from acetic acid is that of reducing, by the help of ebullition, the oxides and salts of mercury and silver. Combined with bases, and anhydrous, its composition is C^2, H^2, O^3.

VESPA CRABO. (Linn). *The Hornet.*

This is the most formidable species of the genus met with in this country. It is much larger than the wasp, and its colours not so bright. The hornet's nest is usually built in hollow trees, or dry stony banks; it is composed of the bark of the ash-tree, detached in filaments, and ground by the mandibles of the insect into a paste, which hardens as the work goes on.

The sting of the hornet causes much pain and inflammation.

VESPA VULGARIS. (Linn.) *The Wasp.*

The wasp's nest is made in much the same way as the hornet's nest. Both wasps and hornets frequently attack bee-hives, destroying the bees, and taking possession of, and consuming the honey.

Order 10. LEPIDOPTERA.

Bombyx mori. (Linn.) *The Silkworm Bombyx.*

Description. The moth is whitish, with two or three obscure transverse rays, and a spot crossing the upper wings. Its caterpillar is the silkworm.

It feeds on mulberry-leaves, and spins an oval cocoon of a serrated tissue of very fine silk, generally of a bright-yellow colour, but sometimes white. It will also feed on the lettuce and other plants; but it then yields silk of inferior quality. It was originally a native of the southern provinces of China.

Hepialus virescens.

This moth is a native of New Zealand, and is found only at the root of the rata tree, (*Metrosiderus robusta*,) a myrtaceous plant. The fungus, called *Sphœria Robertsii*, is found growing on the larva of this insect.

Fourth Division of the Animal Kingdom.

ANIMALIA RADIATA. (Cuv.) RADIATED ANIMALS.

The Radiated Animals, or Zoophytes, as they are called, include a number of beings whose organization, always more simple than that of the three preceding divisions, also presents a greater variety of degrees than is observed in either of them, and seems to agree but in one point, viz., their parts are arranged around an axis, and on one or several radii, or on one or several lines, extending from one pole to the other. Even the entozoa, or intestinal worms, have at least two tendinous lines, or two nervous threads proceeding from a collar round the mouth, and several of them have four suckers situated around a probosciform elevation. In a word, notwithstanding some irregularities, and some few exceptions—those of the Planaria, and most of the Infusoria—traces of the radiating form are always to be found, which are strongly marked in the greater number, and particularly in Asterias, Echinus, the Acalepha, and the Polypi.

Thus Cuvier has included in this division all those animals which are not comprehended in the three preceding; but, in doing so, he has departed from the principle upon which the classification of his three first divisions is founded. In all the animals comprising the vertebrata, mollusca, and articulata, the arrangement of the nervous system forms the essential distinguishing character; whilst in those comprising the radiata, the structure of the nervous system has been allowed to give place in importance to other characters, so that this division embraces creatures of very dissimilar and incongruous formations.

The success of Cuvier in selecting the nervous system as the great point of distinction in establishing the higher divisions of the animal

kingdom, has led succeeding naturalists to attempt a further subdivision of the radiata in accordance with the same principle. From a careful examination of the creatures included in this division, it is found, that whilst in some of them nervous filaments are distinctly visible, there are, on the other hand, others in which no trace of distinct nervous matter can be discerned. The former of these have been classed by themselves, and designated by Mr. Owen, the NEMATONEURA; (*νῆμα*, a thread, and *νευρον*, a nerve;) and the latter have been formed into a distinct group, which has been denominated by Mr. M'Leay the Acrita (*a*, priv., and *κρινω*, to discern.)

THE NEMATONEURA (Owen) includes, 1. *Bryozoa*, or *Polyps with ciliated arms.* 2. *Rotifera.* 3. *Epizoa.* 4. *Cavitary entozoa*, or *Cœlelmintha.* 5. *Echinodermata.*

THE ACRITA, (M'Leay,) CRYPTONEURA, (Rudolphi,) includes, 1. *Sponges.* 2. *Polyps.* 3. *Polygastric animalcules.* 4. *Acalephæ.* 5. *Parenchymatous entozoa.*

As there are but few animals in this division requiring notice, we shall adhere to Cuvier's arrangement of them.

CLASS I. ECHINODERMATA. (*εχινος*, sea-urchin, and *δερμα*, skin.) (Class XV. of General Division.)

These derive their name from the Echinus, or sea-urchin, whose skin is usually covered with spines or thorns. They possess a distinct intestine floating in a large cavity, and accompanied by several other organs for generation, respiration, and a partial circulation.

CLASS II. INTESTINALIA. (Cuv.) ENTOZOA. (Rudolphi.) (*εντος*, intus, within, and *ζοον*, animal.) *Intestinal worms.* (CLASS XVI. of General Division.)

The greater number of these inhabit the interior of other animals, and there only can propagate. There is scarcely an animal that is not the domicile of several kinds; and those which are observed in one species, are rarely found in others. They not only inhabit the alimentary canal, and the ducts that empty into it, such as the hepatic vessels, but even the cellular tissue, and the parenchyma of the most completely-invested viscera, such as the liver and brain. They have neither vessels, even for a partial circulation, nor respiratory organs; they must, therefore, receive the influence of oxygen through the medium of the animal they inhabit. Their body is generally elongated or depressed, and their organs are arranged longitudinally.

ASCARIS LUMBRICOIDES. (Gmel.) *The Long Round Worm.*

This worm is about the thickness of a goose-quill, and from twelve to fifteen inches long. It is generally of a brownish-red colour, but varies according to the aliments with which it is filled. The head is

distinguished from the rest of the body by a circular depression, and it is furnished with three tubercles or valves found in no other entozoa. These worms usually occur in the small intestines of man. The cabbage-tree bark (*Geoffroya inermis*) has been recommended for their expulsion.

ASCARIS VERMICULARIS. (Gmel.) *Oxyuris vermicularis.* (Bremser) *The Maw, or Thread Worm.*

This, which is commonly known as the *Ascaris*, is a small worm, the female being four or five lines in length, and the male only a line or a line and a half. The body is thread-like, very elastic, and of a faint yellow colour. They inhabit the intestines of children, even of those newly born, especially the rectum.

ECHINOCOCCUS HOMINIS. (Rudol.) *The Hydatid.*

The *Hydatid* is a spherical body, consisting of one, and sometimes of two membranes, enclosing a fluid, most commonly limpid and transparent, but which is sometimes found of a tough, hard, and opaque consistence. On the inner coat of the membrane are attached a number of small granular bodies, which are called *echinococci.* Rodolphi divides the hydatids into *viventes* and *non viventes.* He denies the vitality of the hydatid, properly so called, and supposes that the small granular bodies, or *echinococci*, only, which cover the internal surface of the membrane, are endowed with life. Others, however, consider the whole vesicle as a distinct animal. Hydatids have been found in all the textures and cavities of the human body, except the intestinal canal. These are species peculiar to the sheep, the ox, the pig, &c.; their presence in the last gives rise to the condition in pork commonly called *measly.*

FASCIOLA HUMANA. (Gmel.) *The Liver Fluke.*

This worm is three or four lines in length, of an oblong ovate shape, obtuse at each extremity, and of a dirty-whitish or brown colour. It is formed in the gall-bladder, and according to Dr. Bremser, in the liver of man. It is said to be common in sheep, and to cause the disease called *rot* in those animals.

FILARIA MEDININSIS. (Gmel.) *The Guinea-worm.*

It is of the thickness of a voilin-string, tapering a little at the tail, which is slightly curved, and several feet in length. Its colour is white. It occurs only among the inhabitants of Africa and the southern parts of Asia, and is found in the cellular tissue below the integuments, exciting intolerable itching, swelling, pain, and ultimately suppuration, in the part, accompanied by fever. It is generally coiled up circularly, and may be felt upon pressure being made with the finger. When the tumour breaks, and the head of the worm protrudes, it is cautiously pulled, day after day, until the whole is extracted.

STRONGYLUS GIGAS. (Rudol.) *The Large Strongyle.*

This species varies in length from five inches to three feet, and in diameter from two to six lines. The body is slender, cylindrical, tapering towards each extremity, and composed of annular rings.

The female is larger than the male. It is found in the kidneys, and has frequently been passed by the urethra. It is said to be met with in many of the lower animals as well as in man.

TÆNIA SOLIUM. (Gmel.) *The Common Tape-worm.*

This is the species of the tape-worm most common in the inhabitants of this country. It consists of a series of articulations, forming a flattened, riband-like worm, which varies in length from three to fifteen or twenty feet. In this species, the articulations are somewhat irregular, being transverse, oval, rhomboidal, or quadrangular, wrinkled transversely, and having marginal pores, sometimes on one side, and sometimes on the other. The mouth is situated on the anterior part of the head; it is a small orifice, and when viewed with a microscope, exhibits a projecting margin, surrounding an excavation of a striated appearance. On the head there are four orifices, which are supposed to be suckers, by which the worm adheres to the intestines. This worm is more frequent in adults than in children. It occupies the small intestines, especially of females. This species was formerly supposed to be solitary, and hence the specific name *solium;* it is now, however, found to be gregarious, two or three generally occurring in the same individual.

TÆNIA VULGARIS. (Gmel.) *The Broad Tape-worm.*

In this species the articulations are generally broader than long, of an oblong square form, and studded with minute papillæ. On the flattened surface, near the edge of each of these joints, there are one or two small round openings or pores, surrounded by the oviducts, which are disposed in the form of a star. The tail is generally round and simple, but sometimes bifurcated. It infests the small intestines of the inhabitants of Poland, Russia, Switzerland, and some parts of France, but is rarely found in this country.

TRICHOCEPHALUS HOMINIS. (Gmel.) *Trichocephalus dispar.* (Reid). *The Long Thread-worm.*

When full grown, this worm is about two inches long, and of a pale yellowish colour. The anterior end is capillary, and double the length of the posterior. This species was first discovered in 1761, by Rhœder, at Göttingen, in the bodies of some French soldiers, who had died of a contagious disease. It is found chiefly in the cæcum, and is generally more numerous in infants than in adults. Rudolphi found more than a thousand in one individual.

CLASS III. ACALEPHA. (*ακαληϕη*, a nettle.)
(CLASS XVII. of General Division.)

These have neither circulatory nor respiratory organs; their form is circular and radiating; in general the mouth holds the place of the anus; they differ from polypi only in possessing more development in the tissue of their organs.

CLASS IV. POLYPI. (πολυς, many, and πους, foot.) (Class XVIII. of General Division.)

These are small gelatinous animals, whose mouth, surrounded by tentacula, leads into a stomach, which is sometimes simple, sometimes followed by intestines in the form of vessels; it is in this class that we find those numberless compound animals with a fixed and solid stem, which were for a long time considered to be marine plants. The various species of coral, and the sponge, belong to this class.

Antipathes spiralis. (Lamarck.) *Black Coral.*

This species of coral is branched, and has a cortical covering, which is so soft that it entirely decays after death. The dried coral has the appearance of a branch of dry wood. It was formerly used in medicine.

Coralium rubrum. (Lamarck.) *Isis nobilis.* (Linn.) *Red Coral.*

Its general appearance is that of a small shrub, which is found fixed by its base to submarine rocks and other bodies, and, it is said, always in a pendant or reversed position. It is principally obtained in the Indian or Mediterranean seas. The branches seldom exceed three feet in height, and about two inches in diameter. In the recent state, the stem and branches are covered with a soft cortical substance, or epidermis, which is the habitation of numerous small, whitish, soft, semi-transparent polypi. The coral consists principally of carbonate of lime and magnesia, with a small quantity of oxide of iron.

Corallina officinalis. (Linn., Gmel.) *Coralline*, or *Sea-moss.*

This marine production is found in the Mediterranean and other seas, attached to rocks and shells. It consists of several slender articulated stems, subdivided into fine ramifications, and has some resemblance to certain mosses, among which, indeed, it was placed by Tournefort. When fresh, it has a greenish or reddish colour, but from exposure to the air, becomes nearly white. Like coral, it consists principally of carbonate of lime. It was formerly used in medicine.

Although the corallines have been classed among the animal creation by Cuvier, Lamarck, and others, yet they are said to be proved by microscopical examination to possess the cellular structure appertaining to vegetable organization, and are, therefore, placed by many naturalists among the vegetables.

Madrepora. (Linn.) *Madrepore.*

Some of the species of madrepore have been known under the name of *White Coral.* It occurs sometimes branched, sometimes in rounded masses, in slender filaments, or foliaceous; but it is always furnished with a lamellar covering, the divisions of which are joined concentrically, so as to form star-like points, or sometimes lines of a more or less serpentine figure.

Spongia officinalis. (Linn.) *The Officinal Sponge.*

Sponge, in the state in which it is met with in commerce, is a soft, light, elastic, and very porous substance, which readily absorbs liquids into which it is immersed, and yields them up again on compression. It may be considered as the skeleton of an animal, from which the soft

gelatinous part representing the flesh has been removed at the time of its collection. In the living state it is found attached by its base to rocks at the bottom of the sea. It occurs in the Indian, American, and Norwegian Seas, and the Mediterranean. The best sponges are brought from the Grecian Archipelago, and are called *Turkey sponges*. An inferior kind is brought from the West Indies, and is called *West India*, or *Bahama sponge*. Sponge is extensively used for various domestic purposes; the ashes resulting from its combustion in close vessels have also been used in medicine, on account of a small portion of iodine which they contain.

CLASS V. INFUSORIA. (Class XIX. of General Division.)

The term INFUSORIA has been applied to numerous minute animals found in water. They are also called animalcules. It has been ascertained by the microscope that a drop of water, though appearing to the naked eye perfectly clear, is sometimes swarming with living beings. Ehrenberg, to whom we are chiefly indebted for our knowledge of these animalcules, has described species not larger than from one thousandth to one two-thousandth of a line in diameter, and which are separated from one another by intervals not greater than their own size. A cubic inch of water may thus contain more than 800,000 millions of these beings, estimating them only to occupy one-fourth of its space; and a single drop, measuring a line in diameter, placed under the microscope, will be seen to hold 500 millions. Linnæus, not being acquainted with the structure of these minute animals sufficiently well to enable him to distribute them according to their relations in his several classes, placed them at the end of his last class, Vermes, in a genus to which he gave the name of *chaos*. Müller first separated them as a distinct order, and gave them the name of *infusoria*, from the circumstance that the greater number of animalcules had been discovered in liquids, in which vegetable or animal matters had been dissolved by infusion. Müller based his arrangement of the different genera not on their varieties of structure, but on the differences of their external form. After some time, Dr. Ehrenberg of Berlin directed his attention to the subject, and made numerous observations on the internal structure of these animals by means of feeding them with particles of colouring matter, which he diffused in the water containing them. Pure indigo was the substance he employed. By the use of these means, he arrived at very interesting conclusions. He demonstrated, by means of a powerful microscope, the existence of distinct *digestive organs* in all the species. No distinct *muscular fibres* have been detected in the simpler or polygastric forms of infusoria, but in the rotiferous species they have. With respect to the other systems, discoveries equally interesting have been made by Ehrenberg. This observer has separated from what he calls the true infusoria several families of animalcules formerly included in the same class. The principal genera so separated are the *Spermatozoa*, *Cerearia*, and *Vibrio*, which are now considered to belong to the class Entozoa. The

true infusoria have been separated into two distinct divisions: the *Polygastrica*, and the *Rotifera*, or wheel animalcules.

Habitat. These animalcules are not only met with in water containing large quantities of organic matter in solution, but in common sea-water, stagnant fresh-water, and well-water exposed for a short time to the air.

Origin. It has been supposed that they are generated spontaneously; but as they never are observed in fluids secluded from the air, we may suppose that ova of extreme minuteness are always floating in the air, and only require a proper medium to develop themselves. These animals live on fine particles of animal and vegetable matter held in solution in water, and the larger species devour the smaller animalcules.

The Preservation of Animal Substances.

Various processes are employed for preserving animal substances from undergoing decomposition.

1. *Drying in a stove or oven.* This is effected by the application of a temperature sufficient to cause the evaporation of all the moisture, without burning any of the external parts, or causing the juices to run out.

2. *The action of cold* is applied in the northern regions for the preservation of rein-deer tongues, fish, and other animal substances.

3. *Brine*, or *a solution of common salt*, is an efficient preservative agent. Dissolve one part of salt in two and a half parts, by weight, of water, and immerse the meat or other animal substance in this solution, placing a board on the surface of the liquor, loaded with a lump of salt, so as to insure the entire submersion of the animal matter, and at the same time to keep up the strength of the brine by the solution of more salt to compensate for the dilution caused by the animal juices. After the animal substance has remained in the brine for three or four days, it is to be taken out and dried, by rubbing it with bran or pollard, or with dry salt; and it may then be packed in barrels with intermediate layers of large-grained salt, if intended for long keeping, or it may be hung up in a smoking-room. The addition of one ounce of saltpetre to each pound of salt will tend to preserve the red colour of the meat, and the further addition of a small quantity of brown sugar is said to improve its flavour.

The following pickle has been recommended for preserving meat, to which it is said to give a mild and excellent flavour:—

℞ Brown sugar,
Bay salt,
Common salt, of each ℔ij.
Saltpetre ℔ss.
Water, cong. ij. Mix.

4. *Packing in dry salt* is a mode of preservation sometimes resorted to. For this purpose, salting-tubs are used, having false bottoms

perforated with holes. A layer of coarse-grained salt is first made, and then alternate layers of meat and salt. After a week or ten days, the meat is taken out, and again repacked with more dry salt. Sometimes the dry salt is merely rubbed into the meat.

5. *Bucaning meat* is a rude kind of smoking practised by hunters in the forests. Forked branches of trees are stuck in the ground, and by this means a grating of rods, two or three feet high, is made. The flesh, to be preserved, is cut into thick slices, and placed on this grating, while a fire is lighted underneath, so that the meat is rendered fit for keeping, partly by drying and partly by smoking it.

6. *Jerking meat*, or *charqui*, is a method sometimes resorted to in hot climates. It consists in cutting the lean part of meat into thin slices, and exposing these to the full action of the sun, turning the pieces when necessary until perfectly dried. The dried pieces are then pounded in a mortar, and put into pots.

7. *Olive oil* is sometimes used to preserve fish and other animal substances. Jars into which the substances to be preserved are put, are made quite full with the oil, and are then well closed, and the covers cemented down.

8. *Alcohol* is the agent most frequently employed for the preservation of animal preparations for museums, &c. When used alone, it is subject to the objection of its causing the contraction and hardening of the finer parts of animal substances, but this effect may be counteracted, at least in part, by the addition of a small quantity of ammonia. A mixture of equal parts of rectified spirit, sp. gr. 838, and of water, may be used in ordinary cases; but the strength of the spirit must be regulated in some degree by the quantity of fluids contained in the animal substance.

9. *Solution of Corrosive Sublimate* is often used for the preservation of animal substances, but it renders them very hard. It is advantageously employed for dry preparations, and tends especially to protect them from the attacks of insects. It may either be used by injection or by rubbing them over the surface. For the former mode of applying it, solution in water answers best; for the latter mode, solution in spirit.

10. *Alum* preserves animal substances very well for a certain time, but bones are attacked by it. A solution of one ounce of alum in eight ounces of water, when injected into veins and arteries, renders them capable of resisting decay for a long time. In the process of tawing skins, hereafter to be described, alum is used.

11. *Goadby's Solution* is a good substitute for alcohol, and has been found to answer well in a variety of cases. The following are Mr. Goadby's formulæ:—

A 1.

℞ Bay salt ℥iv., alum ℥ij., corrosive sublimate gr. ij., water Oij. Mix.

A 2.

℞ Bay salt ℥iv., alum ℥ij., corrosive sublimate gr. iv., water Oiv. Mix.

B.

℞ Bay salt ℔ss., corrosive sublimate gr. ij., water Oij. Mix.

BB.

℞ Bay salt ℔ss., arsenious acid gr. xx., boiling water Oij. Boil until solution is effected.

C.

℞ Bay salt ℔ss., arsenious acid gr. xx., corrosive sublimate gr. ij., boiling water Oij. Boil until solution is effected.

The solution A 1 is that which Mr. Goadby usually employs. A 2 is used in those cases where there is a tendency to mouldiness, and where the animal texture is tender, for the salt, if in too great quantity, sometimes destroys the tissue. B is used in cases where the animal substance contains carbonate of lime, as in those cases alum effects a decomposition. BB is intended for old preparations; and C, for preparations of this kind, in which there is a tendency to a softening of the parts. Professor Owen has found these solutions to answer better than alcohol for the preservation of nervous matter, and has employed them extensively in the museum of the College of Surgeons.

12. *Gannal's Solution* owes its efficacy to the presence of *Acetate of Alumina.* Its efficacy is similar to that of the solution of alum, and it is subject to the same inconvenience, arising from the action of the salt on some animal substances. It is made by dissolving one ounce of acetate of alumina in twenty ounces of water.

13. *Solution of Sulphate of Zinc* is used to preserve the muscles, teguments, and cerebral substances of vertebrata. It does not injure the bones, and does not become mouldy. It possesses the singular property of destroying all the parts of caterpillars but the teguments, and is therefore well adapted for the preservation of those larvæ which are not naked.

Solution of Chloride of Zinc. Sir William Burnett's Solution. A patent was taken out by Sir W. Burnett, in 1840, for applying a solution of chloride of zinc, one pound of chloride of zinc to a gallon of water, for the preservation of animal and vegetable substances. The substances to be preserved are immersed in the solution for a period varying from 48 to 96 hours, and afterwards dried in the air.

14. *Solution of Sal-ammoniac*, or *Chloride of Ammonium*, has been found to preserve the muscular substance of mammaliæ. The solution is made in the proportion of one part of the salt to ten parts of water.

15. *Solutions of Nitrate of Potash* and of *Persulphate of Iron* are effective preservative agents, but they change the colour of the preparations, and the iron salt attacks the bones.

16. *Naphtha mixed with water*, in the proportion of one part of the former to seven of the latter, is said by Mr. Babington to be a good antiseptic.

17. *Kreosote* preserves animal matter well, but renders the preparations brown. Sixteen drops of kreosote may be mixed with one ounce and a half of water.

18. *Essential Oils* are good preservatives of all parts but the fat, which they dissolve. Oil of turpentine is one of the best. They render many parts transparent if previously dried, which is sometimes advantageous.

19. *The Process of Tanning* is applied to the skins of animals, with the view of preserving and hardening them, and rendering them more fit for some economical purposes. This process consists in soaking the skins, from which the hair and grease have been previously removed by the application of lime, in a solution of tannic acid, together with some extractive matters derived from the barks of certain trees, more especially of the oak.

20. *The Process of Tawing* is also applied for a similar purpose. It consists in first soaking the skins in water with fresh slaked lime for several weeks, the water being changed two or three times during this period. The skins are then taken out and rinsed, and again soaked in water with wheat bran. After this, a paste is made as follows:—Eight pounds of alum and three pounds of common salt are dissolved in hot water; to this is added twenty pounds of wheat-flour, and the yolks of about one hundred eggs, so much water being used as shall form a thin paste. A portion of this paste being diluted with water, the skins are soaked in the mixture, and pulled and stretched from time to time, and subsequently dried.

21. *Acids* are frequently required to dissolve the calcareous parts of animals, such as bones, shells, &c. Hydrochloric or nitric acid, diluted with four or five parts of water, may be used for this purpose.

22. *Alkalies* serve to convert grease into soap, to render it capable of drying, and to make the preparations cleaner.

1. *Weak Ley.*

℞	Carbonate of soda	℥iv.
	Quicklime	℥j.
	Water boiling	Ov.

Add the lime to the soda dissolved in the water, stir, and pour off the clear liquor.

Greasy bones, where the medulla oozes out, may be placed in this for a week or two, and when they begin to whiten, they are to be boiled for a quarter of an hour in the same ley, then well washed and dried. To saponify the spots of grease on the bones, cotton wool dipped in the ley should be laid on. The bones must not be left too long in the ley, as it will, after a time, attack the gelatine.

2. *Strong Ley.*

℞	Carbonate of soda	℥iv.
	Quicklime	℥j.
	Water boiling	Oiiss.

Proceed the same as before.

23. *Injections.* The various injections used by anatomists may be conveniently divided into three classes—viz., 1. Common injections;

2. Fine injections; and 3. Injections for corrosion. The first are used to fill large vessels. The following are some of the principal:—

COMMON INJECTIONS.

1. ℞ Tallow ℥xij., wax ℥v., olive oil ℥iij. Melt and mix.
2. ℞ Wax ℥xij., common turpentine ℥vj., tallow ℥iij., oil of turpentine ℥j. Melt and mix.
3. ℞ Spermaceti ℥ij., wax ℥j., common turpentine ℥j. A very penetrating injection.

FINE INJECTIONS.

These injections are used to trace the capillary vessels.

1. ℞ Gelatine ℥xij., water Ov. Mix, with a gentle heat.

In winter only ℥vij. of gelatine must be used.

2. ℞ Canada balsam, vermilion, q. s. Mix.

INJECTIONS FOR CORROSION.

1. ℞ Bismuth ℥viij., lead ℥v., tin ℥iij. Fuse together. (*D'Arcet's.*)
2. ℞ Resin ℥viij., wax ℥x., common turpentine ℥xij. Melt together.
3. ℞ Wax ℥xvj., resin ℥viij., turpentine varnish ℥vi., vermilion ℥iij. Melt together. (*Mr. Knox's.*)

VEGETABLES YIELDING PRODUCTS

EMPLOYED IN

MEDICINE, DOMESTIC ECONOMY, AND THE ARTS.

CLASSIFICATION OF PLANTS.

Among the several kinds of classification which have been adopted by different botanical writers, that of De Candolle has, perhaps, been received with the most general approbation. The arrangement of plants which that distinguished botanist has made in his Prodromus, so far as that work, which is not yet completed, extends, will be followed here. The vegetable kingdom is first arranged in two great divisions:—

1. *The Vascular,—Phanerogamous*, or *Flowering Plants;* and
2. *The Acrogens,—Acotyledons, Cellular, Cryptogamic*, or *Flowerless Plants.*

The flowering plants, which have spiral vessels, and distinct flowers and sexes, are again divided into *Exogens*, or *Dicotyledonous Plants;* and *Endogens*, or *Monocotyledonous Plants.*

Exogens are plants whose *leaves* have reticulated or branched nerves, forming a sort of network; the *stems*, when cut across and examined, are found to consist of central pith, wood, and bark, and from the centre to the circumference there are fine lines, called medullary rays; they *increase with growth*, by the deposition of layers of wood beneath the bark, and there are found to be as many concentric circles of wood, in the trunk of a tree of this kind, as the plant is years old; the *flowers* usually have a quinary division; and the *embryo* of the seed has two or more cotyledons, opposite.

Endogens are plants whose *leaves* have parallel veins; the *stems*, when cut across, present no distinction of pith, wood, bark, and medullary rays, but consist of confused bundles of woody fibre; they *increase with growth*, by depositions in the interior of the stems; hence these increase but little in thickness, and there is no appearance of concentric circles of wood; the *flowers* usually have a ternary division; and the *embryo* of the seed has but one cotyledon, or if two, they are alternate.

Acrogens, or Cryptogamic Plants, have no *flowers*, properly so

called; many of them are destitute of *leaves*, but if they have leaves, there are either no veins to them, or the veins are of the most simple kind, being either not branched, or if branched, divided by repeated forking; they consist principally of *cellular tissue*, spiral vessels being for the most part absent; when they have *stems*, the wood is arranged in a sinuous or zigzag manner; the *sexual organs* being absent, they have no seeds or embryo; they are reproduced by bodies resembling seeds, and answering the same purpose, called *spores* or *sporules*.

These distinctive characters, however, are not found always to apply as here indicated; so that a plant cannot be referred to either of the foregoing classes, with absolute certainty, from the presence of any one character, but only from a combination of characters. Thus, a plant may have one of the characters of a class to which it nevertheless does not belong, because its other characters are at variance with those appertaining to that class.

In estimating the value of the characters by which a plant should be referred to any particular class, they should be placed in the following order:—1st, *wood;* 2nd, *embryo;* 3rd, *leaves;* 4th, *flowers*. "The structure of the wood is of more importance than all the others, because it indicates a whole series of differently-modified vital phenomena: the embryo is of more importance than the leaves, because it is the part which determines all the final structure of the plant; and the leaves are of more importance than the flowers, because they are intimately connected with the peculiar manner in which the wood of the stem is organized, and determine in the first instance the organization of the flower itself." (*Lindley.*)

Exogens are divided by De Candolle into four sub-classes:—1. *Thalamiflorœ;* 2. *Calyciflorœ;* 3. *Corolliflorœ;* 4. *Monochlamydeœ*.

Sub-class 1. *Thalamiflorœ*. Flowers furnished with both a calyx and corolla. Perianth double. Calyx polysepalous. Petals distinct, together with the stamens inserted on the receptacle (thalamus) not attached to the calyx.

Examples. Ranunculus. Papaver. Sinapis.

Sub-class 2. *Calyciflorœ*. Flowers furnished with both a calyx and corolla. Perianth double. Calyx gamosepalous. Petals distinct, or more or less united at the base, inserted into the calyx together with the stamens.

Examples. Rhamnus. Glycyrrhiza. Rosa.

Sub-class 3. *Corolliflorœ*. Flowers furnished with both a calyx and corolla. Petals cohering in the form of a monopetalous corolla, bearing the stamens, and inserted on the receptacle (thalamus).

Examples. Gentiana. Convolvulus. Mentha.

Sub-class 4. *Monochlamydeœ*. Perianth single; petals incorporated with the calyx or entirely wanting.

Examples. Rheum. Laurus. Quercus.

Endogens are divided into two sub-classes:—1. *Petaloideœ;* 2. *Glumaceœ*. The Prodromus has not reached this class.

Sub-class 1. *Petaloideœ*. Calyx and corolla both present, in three or six divisions; or imperfectly developed in the form of herbaceous scales upon a spadix.

Examples. Crocus. Allium. Scilla.

Sub-class 2. *Glumaceæ.* Perianth usually absent, its place occupied by herbaceous or scabriose bractæ, imbricated over each other; if present, surrounded by such bractæ.

Example. The Grasses.

Cryptogamic plants are arranged in three classes:—

Class 1. Filicoideæ.—*The Ferns.*

Class 2. Muscoideæ.—*The Mosses.*

Class 3. Fungoideæ.—*The Fungi, Lichens, Algæ.*

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* Plants which have an asterisk prefixed to the name, grow wild in this country.

** Plants which have two asterisks prefixed to the name, are commonly cultivated in this country, but are not natives.

DIVISION I.

VASCULARES; PHANEROGAMIA; or FLOWERING PLANTS.

Class I. EXOGENÆ. Sub-class I. THALAMIFLORÆ.

Order 1.—RANUNCULACEÆ.

(De Cand. Prod., t. i. p. 2. Lindl. Nat. Syst., Ed. 2, p. 5.)

Herbaceous plants, with alternate or opposite leaves, generally much divided, with a dilated petiole. *Sepals* 3—6, hypogynous, deciduous; *petals* 3—15; hypogynous; *stamens*, hypogynous, indefinite in number; *anthers* adnate; *pistils* numerous, seated on a torus; *carpels* capsular, baccate, or follicular, one or many seeded; *seeds* albuminous; *albumen* corneous; *embryo* minute.

Plants acrid; many are poisonous.

Aconitum. (De Cand. i. 56.)

Aconitum anthora. (Linn.) *Anthora* s. *Antithora.* (Camer.) *Anthora vulgaris.* (Clus.) *Wholesome wolfsbane, Yellow helmet flower.* Mountainous parts; Europe, Siberia.

Roots cordial. (G.) Root extremely poisonous, similar in action to that of Aconitum napellus. (L.)

Aconitum ferox. (Wallich). Himalaya Mountains.

Root exceedingly poisonous, fatal either when taken internally, or when applied to wounds. Used by the Indian practitioners in cases of chronic rheumatism.

Aconitum heterophyllum. (Wallich). *Atees.* India.

Root used in Indian medicine as a tonic, and aphrodisiac. (O'Sh.)

Aconitum lycoctonum. (Linn.) *Great yellow wolfsbane.* Various parts of Europe.

Root poisonous, occasioning vertigo, stupor, and spasm; has been employed to kill wolves.

*ACONITUM NAPELLUS. (Linn.) (E. B. t. 2730.) *Early blue wolfsbane.*

Fl. purple. June, July. Perennial. Various parts of Europe.

ACONITUM CAMMARUM. ACONITUM NEOMONTANUM.

These are considered by De Candolle as varieties of *Aconitum Napellus.*

These plants are used indiscriminately for each other, and are exceedingly poisonous. The roots are more active than the leaves; both parts are employed in medicine. Given in doses of one grain, gradually increased, they are narcotic, powerfully diaphoretic, and diuretic. The extract and aconitine are used externally in chronic rheumatism, gout, paralysis, dropsy, &c.

ACONITUM PANICULATUM. (Lam.) *Panicled wolfsbane.*

This was the species ordered in the Lond. Pharm. 1836; but *Aconitum Napellus* is generally supplied by the herbalists in London, and is now introduced into the Pharmacopœia. *Aconitum paniculatum* is said by some persons to be inactive.

ACTÆA. (De Cand. i. 64.)

ACTÆA CIMICIFUGA. (Linn.) *Cimicifuga fœtida.* (Gaertn.) Siberia.

Root antispasmodic.

*ACTÆA SPICATA. (Linn.) (E. B. t. 918.) *Aconitum bacciferum.* (C. Bauh.) *Christophoriana. Herb christopher. Bane berries.*

Fl. white. May. Perennial. Europe.

Vulnerary, astringent; juice of the berries affords a deep black dye.

ACTÆA RACEMOSA. (Linn.) *Cimicifuga racemosa.* (Torr.) *Macrotys racemosa. Black snakeroot. Cohosh.* North America.

Root infused in spirit used in rheumatic pains, and also in astringent gargles. This is the *Cimicifuga serpentaria* of the P. U. S., the root being employed instead of rattle-snake root.

ADONIS. (De Cand. i. 23.)

*ADONIS VERNALIS. (Linn.) *Helleborus niger tenuifolius.* (C. Bauh.) *A. Apennina.* (Jacq.) *Bird's eye.*

*ADONIS AUTUMNALIS. (E. B. t. 308.) *Pheasant's eye, Red morocco.*

Fl. scarlet. May to October. Annual. Europe, Siberia.

Astringent, roots bitter.

ANEMONE. (De Cand. i. 16.)

ANEMONE CERNUA. (Thunb.) *Hak too woo* of the Chinese. Japan.

Root much used among the Chinese and Japanese as a bitter medicine.

*ANEMONE NEMOROSA. (Linn.) (E. B. t. 355.) *Ranunculus sylvarum.* (Clus.) *Wood anemone, Wood crowfoot.*

Fl. white, or with a shade of purple. April, May. Perennial.

ANEMONE SYLVESTRIS. (Linn.) *White wood anemone.*

ANEMONE PRATENSIS. (Linn.) *Pulsatilla pratensis.* (Mill.)

ANEMONE VERNALIS. (Linn.) *Yellow anemone.* Europe and Asia.

Plants acrid, caustic, and ulcerating; used in gout and rheumatism; when chewed, they act as sialogogues. Fl. poisonous.

*ANEMONE PULSATILLA. (Linn.) (E. B. t. 51.) *Pulsatilla vulgaris.* (Mill.) *Pasque flower, Pulsatilla.*

Fl. purple. May. Perennial. Europe, Siberia.

Root acrid, sternutatory; leaves detersive.

AQUILEGIA. (De Cand. i. 50.)

*AQUILEGIA VULGARIS. (Linn.) (E. B. t. 297.) *Aquilegia sylvestris.* (C. Bauh.) *Columbine.*

Fl. purple. June. Perennial. Woods and coppices.

Herb, flower, and seeds opening, acrid, diuretic, and used in detersive gargles.

CALTHA. (De Cand. i. 44.)

*CALTHA PALUSTRIS. (Linn.) (E. B. t. 2175.) *Marsh marygold.*

Fl. yellow. March, June. Perennial. Marshy places.

Herb acrid, caustic; useful externally in diseases of the reins or loins.

CLEMATIS. (De Cand. i. 2.)

CLEMATIS DIOICA. (Linn.) Jamaica.

Leaves hot and acrid; an infusion of the bruised leaves and flowers forms a good lotion for the skin.

CLEMATIS ERECTA. (Willd.) *Clematis erecta.* (Linn.) *Upright virgin's bower.* Austria.

CLEMATIS FLAMMULA. (Linn.) *Flammula.* (Dodon.) South of Europe.

Caustic, burning; used for issues and venereal ulcers; seeds drastic; leaves used outwardly in leprosy, internally in inveterate syphilis.

CLEMATIS MAURITIANA. (Lamb.) Madagascar and Isle of France.

Used as a vesicatory.

CLEMATIS SINENSIS. Cochin China.

Used in China as a diuretic and diaphoretic. (O'Sh.)

*CLEMATIS VITALBA. (Linn.) (E. B. t. 612.) *Vitalba.* (Dodon.) *Traveller's joy.*

Fl. greenish white. May, June. Hedges, on chalky soils.

Bark and herb caustic, raising blisters; ophthalmic; young roots eaten as a pot-herb.

**CLEMATIS VITICELLA. (Linn.) *Clematis, Atragene alpina, Virgin's bower.* (Bot. Mag. 565.)

Fl. purple. June, September. Perennial. South of Europe.

Leaves used as a poultice in leprosy; seeds purgative.

COPTIS. (De Cand. i. 47.)

COPTIS TEETA. (Wallich.) *Golden thread root of Assam, Mishmee bitter, Mishmee teeta.* Assam.

Root intensely bitter, deemed in India a tonic remedy of the greatest value. (O'Sh.) It abounds in a yellow bitter principle, soluble in alcohol and water, but appears to possess but little astringency. It may be administered in the form of powder, infusion, tincture, or extract. In Scinde this root is called *Mahmira*, and is used in inflammation of the eyes. Professor Guibourt describes it under the name of *Racine de chynlen ou de mangouste*, and he ascribes it to an apocynaceous plant. Bergins, and J. A. Murray, describe it under the name of *Chynlen*. Ainslie mentions it under the name of *Souline* or *Chyn-len*. The Chinese call it *Honglane*.

COPTIS TRIFOLIA. (Linn.) *Helleborus trifolius. Gold thread.* Canada and Siberia.

Root a pure bitter, used in thrush; leaves dye yellow.

DELPHINIUM. (De Cand. i. 51.)

**DELPHINIUM AJACIS. (Linn.) *Upright larkspur.*

Fl. blue. Annual. Native of Asia Minor.

DELPHINIUM ELATUM. (Willd.) *Siberian bee larkspur.* Siberia.

*DELPHINIUM CONSOLIDA. (Linn.) (E. B. 1839.) *Consolida regalis, Delphinium, Larkspur.*

Fl. blue. June, July. Annual. Sandy or chalky corn-fields. Europe, Asia, North America.

Root, *Delphinium*, P. U. S. Vulnerary, consolidating wounds, ophthalmic.

DELPHINIUM STAPHYSAGRIA. (Linn.) *Staphysagria, Stavesacre.* South of Europe, Levant, Canaries.

Seeds, *staphisagriæ semina*, acrid, nauseous; imported from Turkey; kill lice and rats; purge violently, in doses of gr. iij. to x.; used as a masticatory in tooth-ache, and also in apophlegmatizant gargles.

FICARIA. (De Cand. i. 44.)

FICARIA RANUNCULOIDES. (Mönch.) (E. B. t. 584.) *Chelidonium minus.* (Fuch.) *Ficaria verna.* (Persoon.) *Ranunculus ficaria.* (Linn.) *Lesser celandine, Pilewort.*

Fl. yellow. April, May. Perennial.

Juice of root acrid; styptic; useful in piles, being weakened with wine or beer; leaves caustic, but mild, and eaten in Sweden, according to Linnæus.

HELLEBORUS. (De Cand. i. 46.)

*HELLEBORUS FŒTIDUS. (Linn.) (E. B. 613.) *Helleboraster maximum.* (Lob.) *Great Bastard bearsfoot, Setter wort.*

Fl. green, tipped with purple. April. Perennial. Thickets, &c.

The leaves are emetic and purgative. The juice, obtained by moistening the bruised leaves with vinegar, and then pressing, has also been used. They have been strongly recommended as a vermifuge for the large round worm, (Ascaris lumbricoides).

**HELLEBORUS NIGER. (Linn.) (Bot. Mag., 8.) *Veratrum*

nigrum. (Dodon.) *Helleborus niger, Melampodium, Black hellebore, Christmas rose.*

Fl. white. January. Perennial. Native of the south of Europe.

The fibres of the rhizome are the parts used in medicine. Nauseous, and violently purgative both to man and horse, anthelmintic, diuretic, and emmenagogue; also used as an exutory in cattle to keep open issues.

HELLEBORUS ORIENTALIS? (Lamb.) *East Indian black hellebore.* Greece and the Levant.

Roots very different from the European; qualities the same.

*HELLEBORUS VIRIDIS. (Linn.) (E. B. 200.) *H. hyemalis, Wild black hellebore, Bearsfoot.*

Fl. light green. April. Perennial. Woods, &c., in chalky soil. Qualities the same as black hellebore.

HEPATICA. (De Cand. i. 22.)

**HEPATICA TRILOBA. (Willd.) (Bot. Mag., 10.) *Anemone hepatica.* (Linn.) *Hepatica nobilis, Trifolium aureum, Hepatica, Liverwort.*

Fl. purple or pink. March. Perennial. Native of the south of Europe.

Aperitive, vulnerary, useful in diabetes and dysentery; leaves detergent; infusion taken *ad libitum.*

HYDRASTIS. (De Cand. i. 23.)

HYDRASTIS CANADENSIS. (Linn.) United States and Canada.

Root, *Canada yellow root.* Bitter, used for calumba; gives out a most beautiful yellow colour.

KNOWLTONIA. (De Cand. i. 23.)

KNOWLTONIA VESICATORIA. (Sims.) Cape of Good Hope.

Used as a vesicatory.

MYOSURUS. (De Cand. i. 25.)

*MYOSURUS MINIMUS. (Linn.) (E. B. t. 435.) *Mouse-tail.*

Fl. yellow. June. Annual. Corn-fields, &c.

Astringent, roots bitter.

NIGELLA. (De Cand. i. 48.)

NIGELLA SATIVA. (Linn.) *Fennel flower, Devil in a bush, Gith, Nigella.*

NIGELLA ARVENSIS. (Linn.) *Melanthium sylvestre.* (J. Bauh.) NIGELLA INDICA. South of Europe, &c.

Seeds acrid, oily, attenuant, opening; used as a spice.

PÆONIA. (De Cand. i. 65.)

**PÆONIA OFFICINALIS. (Retz.) (Bot. Mag. t. 1784.) *Peony.*

Fl. crimson, generally double. June. Perennial. Native of the south of Europe.

Roots and seeds anti-epileptic, emmenagogue. (G.) Seeds emetic and cathartic; root believed to be antispasmodic. (O'Sh.)

RANUNCULUS. (De Cand. i. 26.)

**RANUNCULUS ACONITIFOLIUS. (Linn.) (Bot. Mag., 204.) *Bachelor's buttons.*
Fl. white. May, June. Perennial. Native of the Alps.
Herb used to cure intermittents, by being applied to the wrists.

*RANUNCULUS ACRIS. (Linn.) (E. B. 652.) *Buttercups, Upright meadow crowfoot.*
Fl. yellow. June, July. Perennial. Meadows, &c.
Very acrid. Root used, when dry, as a febrifuge in intermittents.

*RANUNCULUS AQUATILIS. (Linn.) (E. B. 101.) *Water crowfoot.*
Fl. white. May, June. Perennial. Ditches and rivers.

*RANUNCULUS ARVENSIS. (Linn.) (E. B. 135.) *Corn crowfoot.*
Fl. yellow. Annual. Corn-fields.
Very acrid and poisonous, but eaten by animals in some countries.

*RANUNCULUS AURICOMUS. (Linn.) (E. B. 624.) *Wood crowfoot.*
Fl. yellow. April, May. Perennial. Woods and coppices.
Less acrid; used while young as a potherb. By drying, most of the ranunculi lose their acridness.

*RANUNCULUS BULBOSUS. (Linn.) (E. B. 515.) *Bulbous crowfoot, Round root crowfoot.*
Fl. yellow. May. Perennial. Meadows, .
Very acrid: kills rats, but not sheep; root used as a vesicatory; yields a nutritive fæcula.

*RANUNCULUS FLAMMULA. (Linn.) (E. B. 387.) *Ranunculus flammeus minor, Lesser spearwort.*
Fl. yellow. June, August. Perennial. Moist Places.

*RANUNCULUS LINGUA. (Linn.) (E. B. 100.) *R. flammeus major, Great spearwort.*
Fl. large, yellow. July. Perennial. Marshes and ditches.
Very acrid, cauterise the skin, poisonous to man and horse.

RANUNCULUS GLACIALIS. (Linn.) France and North of Europe. Called by the mountaineers of Dauphiny *Carline* or *Caraline;* the infusion in hot water is employed by them as a powerful sudorific in colds and rheumatism.

RANUNCULUS MONTANUS. (Willd.) *White-flowered crowfoot.*
South of Europe.
Properties similar to those of R. aconitifolius.

*RANUNCULUS REPENS. (Linn.) (E. B. 516.) *Creeping crowfoot, Crowfoot.*
Fl. yellow. June, October. Perennial. Pastures.
Herb, used as a potherb while young.

*RANUNCULUS SCELERATUS. (Linn.) (E. B. 681.) *R. palustris, Celery-leaved crowfoot, Marsh crowfoot.*
Fl. yellow. June. Perennial. Ditches and sides of pools.
Very acrid and poisonous: sometimes eaten by animals.

RANUNCULUS THORA. (Linn.) *Thora, Alpine crowfoot.* Alps of Europe.

Root extremely acrid and poisonous; the juice has been employed to poison weapons with fatal effect.

THALICTRUM. (De Cand. i. 11.)

THALICTRUM ANGUSTIFOLIUM. (Jacq.)

THALICTRUM AQUILEGIFOLIUM. (Linn.)

Root and herbs bitter, purgative, diuretic; useful in old ulcers and the jaundice.

*THALICTRUM FLAVUM. (Linn.) (E. B. 367.) *Pseudo rhabarbarum, Spanish meadow rue, Common meadow rue.*

Fl. yellow. July. Perennial. Moist meadows.

*THALICTRUM MAJUS. (Murr.) (E. B. 611.) *English rhubarb, Greater meadow rue.*

Fl. yellow. Perennial. Stony pastures in north of England.

Roots of both of these substituted for rhubarb; a double dose required.

*THALICTRUM MINUS. (Linn.) (E. B. 11.) *Lesser meadow rue.*

Fl. yellow. June, July. Perennial. Stony pastures.

Qualities similar to those of T. angustifolium.

TROLLIUS. (De Cand. i. 45.)

*TROLLIUS EUROPÆUS. (Linn.) (E. B. 28.) *Ranunculus globosus.* (J. Bauh.) *Ranunculus montanus.* (C. Bauh.) *Globe crowfoot, Locker gowans, Mountain globe flower.*

Fl. yellow. June, July. Perennial. Moist mountain pastures.

TROLLIUS ASIATICUS. (Linn.) Europe and Siberia.

Very acrid; must be used with caution.

ZANTHORHIZA. (De Cand. i. 65.)

ZANTHORHIZA APIIFOLIA. (L'Her.) Southern parts of United States.

Root, *Yellow root. Zanthorhiza, P. U. S.*, extremely bitter; bitterness very permanent; makes a yellow lake. (G.) A valuable tonic medicine. (O'Sh.)

ORDER 2. DILLENIACEÆ. (De Cand. i. 67.)

Parts of the flowers disposed in fives, *sepals* five, persistent, two exterior, three interior; *petals* five, deciduous, in a single row, hypogynous; *stamens* numerous, arising from a torus; *filaments* thread shaped, dilated either at the base or apex; *anthers* adnate, usually bursting longitudinally, always turned inwards; *carpels* from two to five, either distinct, or cohering together, with a terminate style, and simple stigma, either baccate or two-valved; *seeds* fixed in a double row to inner edge of carpels, either many or only two, sometimes solitary by abortion, surrounded by a pulpy aril; *testa* hard; *embryo* minute, lying in the base of solid fleshy albumen. *Trees* or *shrubs* with alternate *leaves*, rarely opposite, and solitary *flowers* in terminal racemes, or panicles, often yellow.

CURATELLA. (De Cand. i. 70.)

CURATELLA CAMBAIBA. (Lindl.) *Cambaiba.* Brazil.

Astringent; decoction used in Brazil as an application to wounds.

DAVILLA. (De Cand. i. 69.)

DAVILLA BRASILIANA. (D. C.) *Davila rugosa.* (Poir.) *Cipo di carijo, Cambaïbinha, Cipo de caboclo.* Forests of Brazil.

Astringent; decoction used in Brazil in swellings of the legs and testicles.

DAVILLA ELLIPTICA. (Lindl.) *Cambaïbinha.* Brazil.

Astringent.

DILLENIA. (De Cand. i. 75.)

DILLENIA SPECIOSA. (Thunb.) Malabar, Celebes.

DILLENIA ELLIPTICA. (Thunb.) Malabar, Celebes.

Fruits used to acidulate cooling drinks.

ORDER 3. MAGNOLIACEÆ. (De Cand. i. 77.)

The parts of the flowers disposed in threes. *Sepals* 3—6, deciduous; *petals* 3—27, in many rows, hypogynous; *stamens* numerous, free, inserted on the torus beneath the ovaries; *anthers* adnate, long; *ovaries* numerous, simple, arranged upon the torus above the stamens, generally in a spike; *styles* short; *stigmas* simple; *carpels* equal in number to the ovaries, one-celled, one or many seeded, either dehiscent, or indehiscent, in some follicular or subcarnose, in others samariform, aggregate, or partially united into a loose or dense strobilus; *seeds* solitary, or many, attached to the inner edge of the carpels; *albumen* fleshy; *embryo* minute, at base of albumen. Fine *trees* or *shrubs*, with alternate *leaves*; *flowers* large, handsome, often strongly odoriferous. The bark of these trees is bitter, astringent or aromatic.

DRIMYS. (De Cand. i. 78.)

DRIMYS GRANATENSIS. (Linn.) South America.

DRIMYS MAGNOLIÆFOLIA, and two other species not well known. America.

Bark, slightly bitter, very acrid, heating and aromatic.

DRIMYS WINTERI. (Forst.) *Winterana aromatica.* (Soland.) *Wintera aromatica.* (Murr.) America.

Bark, *cortex Winteranus, Winter's cinnamon, Winter's bark;* thick, channelled across on the outside, grey; much cracked on the inside, solid, iron grey; sharp tasted, aromatic, very fragrant; used in scurvy, vomiting, and palsy. Rare at present, being not in such esteem as *Canella alba.*

ILLICIUM. (De Cand. i. 77.)

ILLICIUM ANISATUM. (Linn.) *Anisum stellatum, Star anise.* China.

Fruit, fine scented, stomachic, make excellent liqueurs; also burned as incense; yield an essential oil, *Oleum badiani,* which resembles the common oil of anise, but remains fluid at a lower temperature.

ILLICIUM FLORIDANUM. (Ellis.) Country north of the Gulf of Mexico.

Bark and leaves aromatic and spicy; the effects are similar to those of other aromatic barks.

LIRIODENDRON. (De Cand. i. 82.)

**LIRIODENDRON TULIPIFERA. (Linn.) (Bot. Mag., 275.) *Tulip tree.* Fl. yellow. June. Large tree; native of North America.

Root and bark smell like essence of bergamot, and are used to flavour liqueurs; bark of the root (*Liriodendron, P. U. S.*) used in fevers; contains a bitter principle without tannin or gallic acid.

MAGNOLIA. (De Cand. i. 79.)

MAGNOLIA ACUMINATA. (Linn.) M. AURICULATA. (Lamb.) M. GLAUCA. (Linn.) M. GRANDIFLORA. (Linn.) M. TRIPETALA. (Lamb.) UMBRELLA. (D. C.) America.

The barks of the above species are febrifuge, used for the Peruvian; flowers strongly scented, causing nausea, headache, and even fever.

MAGNOLIA YULAN. (Desf.) *Magnolia precia, Tsin-y, Yu-lan.* China.

Seeds bitter, febrifuge; flowers used in perfumery.

MICHELIA. (De Cand. i. 79.)

MICHELIA CHAMPACA. (Linn.) *M. suaveolens, Champac.* India.

Flowers used in perfumery. (G.) Bark bitter and aromatic; has similar qualities to those of Magnolia acuminata. (O'Sh.)

TALAUMA. (De Cand. i. 81.)

TALAUMA PLUMIERI. (Swart.) *Anona dodecapetala, Magnolia plumieri, Elephant wood.* West Indies.

Flowers distilled with spirit to make a spirituous liquor.

ORDER 4.—ANONACEÆ. (De Cand. i. 83.)

Sepals 3—4, persistent, usually partially cohering; *petals* 6, hypogynous, arranged in two rows, sometimes united in a monopetalous corolla; *stamens* numerous, packed closely together, covering a large hypogynous torus; *filaments* very short; *anthers* adnate, turned outwards, with an enlarged four-cornered connective, sometimes nectariferous; *ovaries* usually numerous, closely packed, separate, or cohering; *styles* short, *stigmas* simple; *carpels* either succulent or dry, one or many seeded, distinct, or concrete into a fleshy mass; *seeds* attached to the sutures in one or two rows, sometimes furnished with an aril; *testa* brittle; *embryo* minute, in the base of hard fleshy albumen. *Trees* or *shrubs*, with alternate simple *leaves; flowers* usually green or brown.

ANONA. (De Cand. i. 83.)

ANONA MURICATA. (Linn.) *Sour sop.* West Indies.

Root in decoction used against fish poison; fruit eatable; inner bark made into *bast.*

ANONA PALUSTRIS. (Linn.) *Alligator apple, Water apple.*

ANONA RETICULATA. (Linn.) *Nettle custard apple.*

ANONA SQUAMOSA. (Linn.) *Sweet sop.* West Indies.

Fruit esculent; imported from the West Indies; preserved in syrup.

ASIMINA. (De Cand. i. 87.)

ASIMINA TRILOBA. (Dunal.) North America.
Fruit fleshy; juice very acid.

GUATTERIA. (De Cand. i. 93.)

GUATTERIA VIRGATA. (Dunal.) *Cananga virgata*, and some other species. Jamaica.
Fruits aromatic, very heating.

MOLLINEDIA. (Endl. Gen. Pl. 314.)

MOLLINEDIA REPANDA.
Fruits yield a purple colour.

MOLLINEDIA OVATA.
Fruit yields a violet colour.

MONODORA. (De Cand. i. 87. Lindl. 28.)

MONODORA MYRISTICA. (Dunal.) *Anona myristica, American nutmeg.* Jamaica, Africa.
Qualities similar to those of the nutmeg, but less pungent.

PORCELIA. (De Cand. i. 88.)

PORCELIA NITIDIFOLIA. (Ruiz et Pav.) Peru.
Fruit grateful, leaves yield a yellow colour.

UNONA. (De Cand. i. 88.)

UNONA ÆTHIOPICA. (Dunal.) *Habzelia æthiopica, Uvaria æthiopica.* Sierra Leone.
Capsules, *Piper æthiopicum, Ethiopian pepper, Grains de zelim, Monkey pepper*, very aromatic.

UNONA AROMATICA. (Dunal.) *Habzelia aromatica.* Guiana.
Fruit pungent, aromatic; employed by the blacks in the place of spice.

UNONA DISCRETA? (Linn.)
Fruit aromatic.

UNONA TRIPETALA. (D. C.) *Uvaria tripetaloidea.* Amboyna.
Yields a gum by incision.

UNONA XYLOPIOIDES. (Dunal.) *Uvaria febrifuga, Xylopia longifolia.* Banks of the Orinoco.
Bark febrifuge, said to be superior to Peruvian bark. The fruit is found a valuable febrifuge on the Orinoco.

XYLOPIA. (De Cand. i. 92.)

XYLOPIA GLABRA. (Linn.) *Bitterwood.* Barbadoes and Jamaica.
Wood, bark, berries, warm and bitter.

ORDER 5.—MENISPERMACEÆ.

Flowers sometimes unisexual, very often diœcious, and very small. *Sepals* and *petals* confounded in one or more rows, each of which is composed of either three or four parts, hypogynous, deciduous; *stamens* monadelphous, occasionally distinct,

sometimes opposite the inner sepals, and equal to them in number, sometimes three or four times as many; *anthers* adnate, turned outwards; *ovaries* sometimes numerous, each with one style, sometimes cohering, and forming a many-celled body, occasionally by abortion, celled; *drupes* generally berried; one-seeded, oblique, or lunate, compressed; *seed* of the same shape as the fruit; *albumen* very small; *embryo* curved, or turned in the direction of the circumference; *cotyledons* flat. *Shrubs*, with a flexible tough tissue, and sarmentaceous habit, with alternate, simple, rarely-divided *leaves*; and small, and usually racemose *flowers*.

ABUTA. (De Cand. i. 103.)

ABUTA CANDICANS. (Richard.) *Liane amere.*

ABUTA AMARA. *Bitter pareira.* Cayenne.
Roots bitter.

ABUTA RUFESCENS. (Aubl.) *Menispermum abuta. Brown Pareira brava.* Cayenne and Guayana.
Same qualities as Cissampelos pareira.

CISSAMPELOS. (De Cand. i. 100.)

CISSAMPELOS CAAPEBA. (Linn.) *Liane a glacer l'eau, Timac.* West Indies.
A very powerful diuretic, in use among the negroes in Martinique against bites of serpents.

CISSAMPELOS GLABERRIMA. (Aug. de St. H.) *Brazilian Pareira.*

CISSAMPELOS OVALIFOLIA. (D. C.) *Orilha de onça.* Brazil.
Bitter; roots employed in Brazil in decoction as a cure for intermittent fever.

CISSAMPELOS PAREIRA. (Lamb.) *White Pareira brava, Velvet leaf.* West Indies, &c.
Trunk and root diuretic, very useful in obstructions, dropsy, or gravelly complaints. This is the true *Pareira brava.* (De Cand.)

COCCULUS. (De Cand. i. 96.)

COCCULUS ACUMINATUS. (D. C.) *Menispermum acuminatum,* (Lamb.) Coromandel and Brazil.
Employed as an antidote to the bites of snakes.

COCCULUS CEBATHA. (D. C.) *Menispermum edule, Cabatha.* Arabia.
Berry esculent, but acrid, producing an intoxicating liquor by fermentation.

COCCULUS PALMATUS. (D. C.) *Menispermum palmatum.* (Lamb.) *Jateorrhiza palmata.* (Miers.) *Kalumba,* Mozambique.
Root. *Calumbæ radix, Calumba* or *Colombo root.* Bitter. aromatic, stomachic, anti-emetic, astringent; dose 3ss. frequently in a day; in transverse slices, one or two inches in diameter, and not half an inch thick, covered with a bark; imported from Mozambique in bags or cases.

COCCULUS BAKIS. (G. P.) C. BURMANNI. (D. C.) C. CORDIFOLIUS. (D. C.) C. CRISPUS. (D. C.) (known by the name of *Funis felleus*). C. EPIBATERIUM. (D. C.) C. FIBRAUREA. (D. C.)

C. PLATYPHYLLUS. C. PELTATUS. Also contain a bitter principle, and are used by the inhabitants of the East Indies, Africa, and South America, for the cure of intermittent fevers, liver complaints, and urinary affections.

COCCULUS SUBEROSUS. (D. C.) *Anamirta cocculus.* (Willd.) *Menispermum cocculus.* (Linn.) *Cocculus indicus.* Malabar, Indian Archipelago.

Capsules acrid, used to intoxicate fish, and to destroy vermin; also, by brewers, to give a false strength to beer. Poisonous to all animals, and generally to vegetables also.

LARDIZABALA. (De Cand. i. 95.)

LARDIZABALA BITERNATA. (Ruiz et Pav.) Chili.

Berry esculent.

MENISPERMUM. (De Cand. i. 102.)

MENISPERMUM FENESTRATUM. (Gaertn.) *Coscinium fenestratum.* (Colebr.) *Cissampilos convolvulaceæ.* (Moon's Cat.) *Pareira medica.* (Lindl.) *Woniwol, Wennewelle, Venivel,* or *Bangwellzetta.* Ceylon.

Infusion of the root used by the Cingalese as a stomachic and anthelmintic. It has been imported into London in pieces of from twelve to eighteen inches in length, and is known as *Calumba wood.* The wood yields an inferior yellow dye. (Thwaites.) Transverse sections of the wood somewhat resemble Calumba root in appearance; and their substitution for that substance having been attempted, they have been called *False Calumba root.* The colouring matter of the wood consists principally of *Beeberine.*

MENISPERMUM LACUNOSUM.

Fruit used to intoxicate fish.

ORDER 6.—BERBERIDEÆ. (De Cand. i. 105.)

Sepals 3—4—6, oblong or oval, often somewhat coloured, arranged alternately in a double row, furnished externally with petaloid scales; *petals* as many as the sepals, and opposite to them, or in a few instances double the number, hypogynous, and generally with a glandular scale at the base; *stamens* as many as the petals, and opposite to them; *filaments* short; *anthers* oblong, adnate, bilocular, the cells dehiscing from base to apex by a subelastic valve; *ovary* by abortion solitary, ovate, suboblique, one-celled; *style* sublateral, very short, crowned with a suborbicular stigma; *fruit* baccate or capsular; *seeds* 1—3, ovate or globose, attached to the base of the lateral placenta; *albumen* fleshy, or subcorneous; *embryo* straight; *radicle* swollen at the point; *cotyledons* flat. *Shrubs* or *herbaceous perennial* plants, for the most part smooth with alternate, compound, usually exstipulate *leaves.*

BERBERIS. (De Cand. i. 105.)

BERBERIS LYCIUM. (L.) Mountains in North India.

In India, an extract prepared by digesting in water sliced pieces of the root and stem branches of this and other species of barberry, is called *Rusot,* and is used advantageously in cases of ophthalmia. Dr. Royle has seen it particularly useful when the acute symptoms have

subsided; and others say, that it is perhaps the best application in ophthalmia ever employed. (L.)

The other species employed for making *rusot* are B. ARISTATA (D. C.) and B. KUNAWURENSIS. (O'Sh.)

*BERBERIS VULGARIS. (Linn.) (E. B. 49.) *Berberis dumetorum.* (C. Bauh.) *Oxycantha Galeni.* (Tabern.) *B. oxycantha, Common Barberry.*

Fl. Yellow. June. Perennial. Woods and hedges.

Berries, *barberries, pipperidges,* very acid, incisive; astringent, hepatic; bark useful in jaundice as an aperitive; root very bitter: root, wood, and bark give wool a yellow colour, destructible by air and soap. (G.) A refreshing drink prepared by crushing the fruit in water is considered serviceable in fevers. (L.)

EPIMEDIUM. (De Cand. i. 110.)

*EPIMEDIUM ALPINUM. (Linn.) (E. B. 438.) *Alpine barren wort.*

Fl. purplish. May. Perenial. North of England.

Roots and leaves astringent.

LEONTICE. (De Cand. i. 109.)

LEONTICE CHRYSOGONUM. (Linn.) *Chrysogonum, Red turnip.* Greece.

LEONTICE LEONTOPETALUM. (Linn. *Leontapetalon, Black turnip.* South of Europe.

Roots stomachic.

ORDER 7. PODOPHYLLACEÆ. (De Cand. i. 111.)

Sepals 3—4, deciduous, or persistent; *petals* in two or three rows, each of which is equal in number to the sepals; *stamens* hypogynous, 12—18, arranged in two, three, or more rows; *filaments* filiform; *anthers* lineal, or oval, terminal, turned inwards, bursting by a double longitudinal line; *torus* not enlarged; *ovary* solitary; *stigma* thick, nearly sessile, somewhat peltate; *fruit* succulent or capsular, one-celled; *seeds* indefinite, attached to a lateral placenta, sometimes having an aril; *embryo* small, at the base of the fleshy albumen. *Herbaceous* plants, with broad-lobed *leaves*, and radical solitary, white *flowers*.

JEFFERSONIA. (De Cand. i. 111.)

JEFFERSONIA DIPHYLLA. (Pers.) North America.

Root purgative.

PODOPHYLLUM. (De Cand. i. 111.)

PODOPHYLLUM PELTATUM. (Linn.) *May-apple, Mandrake in North America.* United States.

Root, *Podophyllum, P. U. S.*, purgative, a very valuable, sure, and active cathartic; it is administered in fine powder. The leaves are poisonous, and the whole plant narcotic.

ORDER 8.—NYMPHÆACEÆ. (De Cand. i. 113.)

Torus of the flower expanded into a cup, which encloses the ovaries, and is crowned by the stigmas; *sepals* 4—6, coloured, persistent, inserted on the torus; *petals* oblong,

flat, in many rows, each row consisting of as many petals as there are sepals; *stamens* numerous, in many rows, inserted a little above the petals on the torus; *filaments* flat; *anthers* adnate, introrse, linear, bilocular, longitudinally birimose; *carpels* 8—24, enclosed within the torus, membraneous, without valves, many-seeded; *stigmas* connate at the base, free at the apex, radiating over the urceolate torus; *seeds* numerous, inversely ovate, globose, surrounded by a follicular arillus, and attached to the parietes of the carpels; *embryo* at the base of a farinaceous albumen, small, turbinate, globose, enclosed in a separate membraneous bag, and hence it appears to be monocotyledonous, but upon opening the bag two foliaceous cotyledons are exposed. *Aquatic* herbs, with round, repent, horizontal *stems*; *leaves* peltate, or cordate, fleshy, floating; *flowers* solitary and radical, with long peduncles.

EURIALE. (De Cand. i. 114.)

EURIALE FEROX. (Salisb.) *Aneslia spinosa.* Calcutta.

Seeds farinaceous, much eaten by the natives when roasted, or rather baked. The Hindoo physicians consider them possessed of powerful medicinal virtues, such as restraining seminal gleets, invigorating the system, &c. (L.)

NELUMBIUM. (De Cand. i. 113.

NELUMBIUM SPECIOSUM. (Willd.) *Faba Ægyptiaca, Nymphæa nelumbo, Egyptian bean, Jamaica water lily.* Warm parts of Asia, &c.

Root used as food; liquor that runs out of the foot-stalk when cut used in looseness and vomiting; also diuretic and cooling; seeds nutritive; bark is said to form Chinese rice-paper; others ascribe it to *Artocarpus jaca.*

NUPHAR. (De Cand. i. 116.)

*NUPHAR LUTEA. (Smith.) (E. B. 159.) *Nymphæa lutea*, (Linn.) *Nenuphar lutea*, (Haynes.) *Yellow water lily.*

Fl. yellow. July. Perennial. Lakes and still waters.

Root stock slightly poisonous; beetles and cockroaches are said to be killed by its infusion in milk; it has been reputed sedative and anti-aphrodisiac (L.); it is also astringent, and contains a quantity of fecula. (G.)

NYMPHÆA. (De Cand. i. 114.)

*NYMPHÆA ALBA. (Linn.) (E. B. 160.) *White water lily*

Fl. white. July. Perennial. Lakes and still waters.

Root, astringent, refrigerant; a weak infusion useful in leprosy, dose a pint, night and morning; it is also styptic, and slightly narcotic; has been prescribed in dysentery, and is occasionally chewed by singers to relieve the relaxation of the uvula.

NYMPHÆA ODORATA. (Ait.) United States.

Stems extremely astringent, sometimes used in the composition of poultices, answering a purpose similar to that of lead poultices and alum curd. (L.)

ORDER 9.—PAPAVERACEÆ. (De Cand. i. 117.)

Sepals two, deciduous; *petals*, hypogynous, regular, often four, disposed in a cruciate manner; *stamens* hypogynous, some multiple of four, combined in parcels; *anthers* bilocular, innate, opening by a double furrow; *ovary* free, consisting either of a few carpels (2, 3), or of many (10—12), often surrounded by a membraneous production of the thalamus; *style* none, or short; *stigmas* radiating; *capsule* ovate, or elongated and pod-shaped, the carpels being connected by their seminiferous margins; *seeds*

numerous; *albumen* between fleshy and oily; *embryo* straight, minute at the base of the albumen; *cotyledons* plano-convex. *Herbaceous* plants, or *shrubs*, with a milky juice, and alternate, more or less divided *leaves*; *peduncles* long, one-flowered; *flowers* never blue.

ARGEMONE. (De Cand. i. 120.)

ARGEMONE MEXICANA. (Linn.) *Jamaica yellow thistle.* North America, West Indies.

Juice and leaves used in ophthalmia; seeds emetic, yield an oil. (G.) Called *Figo del inferno* by the Spaniards, on account of the powerful narcotic effects of the seeds, which are stronger than opium; an emulsion prepared from them acts first as an anodyne, and afterwards as a purgative: these effects are denied by some, but in Nevis the oil obtained from the seeds is used instead of castor-oil; juice employed in India in chronic ophthalmia, and in primary syphilitic sores; infusion said to be diuretic, and to give relief in strangury produced by blisters. (L.)

BOCCONIA. (De Cand. i. 121.)

BOCCONIA FRUTESCENS. (Linn.) Mexico.

Root red, used in dyeing.

CHELIDONIUM. (De Cand. i. 122.)

*CHELIDONIUM MAJUS. (Mill.) (E. B. 1581.) *Common celandine, Great celandine.*

Fl. yellow. May, June. Perennial. Waste places near towns.

Root detersive, acrid, purgative; herb ophthalmic. (G.) Juice a violent acrid poison; it has been regarded, medicinally, as stimulating, aperient, diuretic, and sudorific; it was also considered a powerful deobstruent. It is a popular remedy for warts, and has been employed successfully in opacities of the cornea. (L.)

GLAUCIUM. (De Cand. i. 122.)

*GLAUCIUM FLAVUM. (Crantz.) (E. B. 8.) *Yellow-horned poppy, Chelidonium glaucum.*

Fl. yellow. July, August. Biennial. Sandy sea-shores.

Properties of the seeds and juice analogous to those of Argemone Mexicana. (G.) Juice used in veterinary practice; two drachms of the seed in a pint of water make a good emetic. (O'Sh.)

HYPECOUM. (De Cand. 123.)

HYPECOUM PENDULUM. (Linn.) *Cuminum soliquosum, Codded wild cumin.* South of Europe.

HYPECOUM PROCUMBENS. (Linn.) *Hypecoon, Horned wild cumin.* South of Europe.

Narcotic, yield *Cumin opium.*

MECONOPSIS. (De Cand. i. 120.)

MECONOPSIS ACULEATA. (O'Sh.) Nepaul.

Roots reputed to be exceedingly narcotic; but an alcoholic extract of one drachm of the root given to a small dog produced no perceptible effect. (O'Sh.)

PAPAVER. (De Cand. i. 117.)

*PAPAVER ARGEMONE. (Linn.) (E. B. 643.) *Argemone capitulo longiori.* (C. Bauh.) *Papaver erraticum capite oblongo hispido,* (Buxb.) *Long-headed bastard poppy, Long prickly-headed poppy.*

Fl. scarlet. June. Annual. Corn-fields.

Leaves used outwardly in inflammations; the yellow expressed juice takes off spots in the cornea.

*Papaver rhœas. (Linn.) (E. B. 645.) *Papaver erraticum majus.* (C. Bauh.) *P. rubrum, Rhœas, Common red poppy, Corn rose.*

Fl. scarlet. June, July. Annual. Corn-fields.

Petals, *rhœadas petala*, pectoral, slightly anodyne, used also as a red colouring ingredient in medicines. (G.) The beautiful red petals are employed in the preparation of the *Syrupus rhœados* of the Pharmacopœia, useful merely as a colouring matter; the plant is not known to be narcotic. (Pereira.)

*Papaver somniferum. (Linn.) (E. B. 2145.) *Papaver officinale.* (Gmel.) *P. hortense.* (C. Bauh.) *White poppy.*

Fl. white. July. Annual. Originally from Asia, but now often cultivated in, and spontaneously growing by, the sides of fields.

There are two varieties of this plant.

α. *Nigrum*, with black seeds.

β. *Album*, with white seeds.

Seeds, *maw seed*, put into cakes, used in emulsions, better tasted than almonds, yield oil; capsules without the seed, *Poppy-heads, Papaveris capsulæ*, used in anodyne fomentations, yield by incision the best opium, and by expression a coarser sort; cultivated by the Lincolnshire cottagers for the purpose of distilling a narcotic water from the flowers. (G.) From the wounded half-ripe capsules flows a juice which concretes into opium, the well-known powerful narcotic drug; from the dried capsule, the decoction, syrup, and extract of poppies, are prepared. Dr. Pereira justly observes, that these capsules, or "heads," would be more active, if gathered before ripeness; when full-grown, and just when the first change of colour is perceptible, should be the best time to collect them; the seeds are not narcotic, but yield a bland oil, similar to that obtained from olives; they are given to birds as food.

Sanguinaria. (De Cand. i. 121.)

Sanguinaria Canadensis. (Linn.) *Blood root, Puccoon, Red root.* North America.

Juice blood red, used in dyeing; fruit narcotic; root *Sanguinaria, P. U. S.*, emetic, purgative. (G.) An acrid narcotic; in small doses it lowers the pulse, in smaller still it has some reputation as a tonic stimulant; powder of root acts violently as an emetic, is a useful escharotic in cases of soft polypi, has been recommended in typhoid pneumonia, phthisis, croup, hydrothorax, jaundice, &c. (L.)

Order 10.—FUMARIACEÆ. (De Cand. i. 125.)

Calyx of two small membranaceous and deciduous sepals; *petals* four, cruciate, free, or united at the base, sometimes one free, and three united; the two exterior ones alternate with the sepals, and either one or both having a spur, or gibbosity, the two anterior ones oblong, linear, with a callosity at the apex; *stamens* with six filaments, arranged in two phalanxes opposite to the external petals; *anthers* six, small,

the lateral ones of each phalanx are one-celled, the central two-celled; there are, therefore, eight cells of the anthers, and, strictly speaking, there are but two anthers in each phalanx; *ovary* one, free; *style* filiform; *stigma* bilamellate, parallel to the interior petals; *fruit* dry, in some a bivalved, polyspermous, dehiscing silique, with opposite valves, having two persistent, nerviform placentas at the suture; in some, the fruit is two-seeded, and indehiscent, the valves being firmly united: in others, the fruit is without valves, indehiscent, one-seeded by abortion; *seeds* ovato-globose, shining, with an arillus, or caruncle, horizontally attached to the lateral placenta; *albumen* fleshy; *embryo* basilar; *cotyledons* oblong. *Herbaceous* plants, with brittle stems, and a watery juice; *leaves* usually multiplied, alternate, often with tendrils; *flowers* purple, white, or yellow; *inflorescence* racemose.

CORYDALIS. (De Cand. i. 126.)

*CORYDALIS BULBOSA. (D. C.) (E. B. 1471.) *Fumaria bulbosa*, (Linn.,) *Fumaria cava*, (Hoffm.,) *Bulbous-rooted fumitory, Solid-rooted corydalis.*

Fl. white or reddish. April, May. Perennial. Groves and thickets.

*CORYDALIS CAPNOIDES. (Pers.) (E. B. 588.) *Fumaria lutea, Yellow corydalis, Yellow fumitory.*

Fl. yellow. May. Perennial. Old walls.

Very opening, refreshing; of use in cutaneous disorders, boiled in milk; or their expressed juice taken daily, to ℥ij twice a-day; infusion removes freckles, and clears the skin; dyes yellow.

CORYDALIS FABACEA. (Pers.) *Fumaria fabacea.* (Linn.) Sweden· Denmark.

CORYDALIS TUBEROSA. (D. C.) *Fumaria cava.* Hedges in South Europe.

Roots very bitter, rather acrid; they are the *Radix aristolochiæ* of the continental shops, which is principally employed as an external application to indolent tumours.

FUMARIA. (De Cand. i. 129.)

*FUMARIA OFFICINALIS. (Linn.) *Common fumitory.*

Fl. pink, blood-red at tips. June, September. Annual. Road-sides.

Herbage bitter, slightly diaphoretic and aperient; the juice was formerly administered in cutaneous diseases, and obstructions of the liver. (L.)

ORDER 11.—CRUCIFERÆ. (De Cand. i. 131.)

Sepals four, cruciate, deciduous; *petals* four, cruciate, alternate with the sepals; *stamens* six, of which two are shorter, and opposite the lateral petals, sometimes toothed; *disk* with various green glands; *ovary* single; *style* one; *stigmas* two; *fruit* a silique, or silicle, one-celled, one or many-seeded, often tipped with the style; *seeds* attached in a single row by a funiculus to each side of the placenta; *albumen* none; *embryo* oily, with the radicle folded upon the cotyledons. *Herbs*, or *shrubs*, with mostly alternate *leaves*; *racemes* opposite the leaves, or terminal, generally without bracteæ.

Contain azote (nitrogen) in their composition, and therefore easily putrify, and furnish volatile alkali by distillation; they are generally stimulant, but, when dried, lose their antiscorbutic quality; seeds soon lose their vitality, unless kept moist in a cool place; these plants are always the first to be attacked by insects, and soon destroyed by them, when kept in a hortus siccus.

ALYSSUM. (De Cand. i. 160.)

ALYSSUM CAMPESTRE. (Linn.) *Alysson.* Spain.

Seeds, with honey, take away freckles; used in mania.

ALLARIA. (De Cand. i. 196.)

*ALLARIA OFFICINALIS. (Andrz.) (E. B. 796.) *Erysimum allaria, Jack by the hedge, Sauce alone.*

Fl. white. May, June. Perennial. Hedges.

Antiscorbutic, used in coughs; externally detersive; seeds acrid, lithontriptic.

ARABIS. (De Cand. i. 142.)

*ARABIS HIRSUTA. (Scop.) (E. B. 587.) *Turritis hirsuta, Tower mustard.*

Fl. white. June. Biennial. Walls, rocks, and banks.

*ARABIS TURRITA. (Linn.) (E. B. 178.) *Bastard tower mustard, Tower-wall cress.*

Fl. white. May. Perennial. Walls at Oxford and Cambridge.

Juices kill worms, and cure the thrush.

BARBAREA. (De Cand. i. 140.)

*BARBAREA PRÆCOX. (Brown.) (E. B. 1129.) *Erysimum præcox, Early winter cress.*

Fl. yellow. April, October. Waste places, Devonshire.

Herb acrid, used in scurvy, eaten in salads.

*BARBAREA VULGARIS. (Brown.) (E. B. 443.) *Erysimum barbarea, Bitter winter cress, Yellow rocket, Winter rocket.*

Fl. yellow. May, August. Perennial. Pastures and hedges.

Antiscorbutic, used in coughs; externally detersive; seeds acrid, lithontriptic.

BRASSICA. (De Cand. i. 213.)

*BRASSICA CAMPESTRIS. (Linn.) (E. B. 2234.) *Wild navew.*

Fl. yellow. June, July. Annual, biennial. Fields.

Several varieties of this plant are cultivated for different purposes, these are—

α. *Brassica campestris oleifera, Colsa de printems, Navette de printems.*

Seeds pressed for oil.

β. *Brassica pabularia.*

Employed for sheep fodder.

γ. *Brassica napobrassica, Swedish turnip.*

Used for food.

*BRASSICA NAPUS. (Linn.) (E. B. 2146.) *Brassica napus oleifera, Napus sylvestris, Cole, Rape, Colsa d'hiver, Navetta d'hiver.*

Fl. yellow. May, June. Biennial. Fields.

Cultivated for an oil expressed from the seeds.

BRASSICA ESCULENTA (*variety*). *Napus dulcis, Navew, French turnip.*

Roots nourishing, containing a sweet juice, which is very pectoral, and of great use in coughs, asthma, colds, and consumptions.

BRASSICA OLERACEA. (Linn.) (E. B. 637.) *B. Sylvestris, Wild cabbage.*

Fl. yellow. May, June. Biennial. Fields, &c.

The principal cultivated varieties are—

β. *Acephala, Curled kale.*
γ. *Bullata, Savoy cabbage.*
δ. *Capitata, Common white and red cabbage.*
ε. *Caulorapa, Turnip-stemmed cabbage.*
ζ. *Botrytis.*
  a. *Cauliflora, Cauliflower.*
  b. *Asparagoides, Broccoli.*

These, and others, form a copious source of aliment to man and beast; juice a good pectoral, discussive, diuretic, and opens the belly: leaves vulnerary, opening.

Red cabbage, Brassica oleracea rubra. Leaves used to make a test-liquor for acids and alkalies. *Pickled red cabbage.* The leaves sliced, and preserved with vinegar and spices, used as a sauce.

Saur kraut, Brassica acidulata. Large white cabbages, cut into thin horizontal slices, and placed in a barrel, with a layer of salt at the top and bottom, and between each layer of cabbages. A board, with some weight on it, is then put on the top, and it is kept in a cool place for some weeks; a kind of fermentation takes place, and vinegar is formed; some add juniper berries, coriander seeds, tops of anise, or caraway seeds, to the salt, as a kind of spice. It may be dried in an oven without any loss of its flavour.

*BRASSICA RAPA. (Linn.) (E. B. 2176.) *Wild turnip.*
Fl. yellow. April, May. Biennial.
When cultivated, the root is nourishing.
Brassica rapa oleifera, Navette de dauphine is a variety cultivated on account of the oil expressed from the seeds.

BUNIAS. (De Cand. i. 229.)

BUNIAS ERUCAGO. (Linn.) South of Europe.
Acrid, diuretic.

CAMELINA. (De Cand. i. 201.)

*CAMELINA SATIVA. (Crantz.) (E. B. 1254.) *Myagrum sativum, Wild gold of pleasure.*
Fl. yellow. June, July. Annual. Fields among flax.
Vermifuge; seeds, *Sesamum seeds*, useful in palsy; yield oil.

CAPSELLA. (De Cand. i. 177.)

*CAPSELLA BURSA PASTORIS. (Mönch.) (E. B. 1485.) *Thlaspi burso pastoris, Shepherd's purse.*
Fl. white. Whole year. Annual. Very common.
Seeds acrid, detersive, astringent.

CAKILE. (De Cand. i. 185.)

*CAKILE MARITIMA. (Scop.) (E. B. 231.) *Bunias cakile, Purple sea-rocket.*
Fl. purple. June, August. Annual. Sandy sea-shores.
Antiscorbutic; useful in the colic.

CARDAMINE. (De Cand. i. 149.)

*CARDAMINE PRATENSIS. (Linn.) (E. B. 776.) *Nasturtium pre-*

tense, magneflore. (C. Bauh.) *Flos cuculi.* (Dod.) *Cuckoo-flower. Ladies-smock.*

Fl. purple or violet. May. Perennial. Moist meadows.

Said to be stimulant, diaphoretic, and diuretic. The dried flowers have been a popular remedy for epilepsy in children. (L.) Depurative, and antiscorbutic; used in obstructions and calculous cases. Flowers, *cardamines flores*, antispasmodic, in doses of ʒj to ʒij twice or thrice a day. Flowering tops, are still more successfully used in epileptic fits. (G.) Recommended by Sir George Baker in cholera and spasmodic asthma. (Pereira.)

CHEIRANTHUS. (De Cand. i. 135.)

*CHEIRANTHUS CHEIRI. (Linn.) (E. B. 1934.) *Cheiri, Leucojum lutea, Common wall flower.*

Fl. yellow or dark brown. April, May. Perennial or biennial. Walls.

Flowers cordial, emmenagogue; used in palsy.

COCHLEARIA. (De Cand. i. 172.)

*COCHLEARIA ANGLICA. (Linn.) (E. B. 552.) *C. Britannica marina, English scurvy grass.*

Fl. white. May, June. Annual. Sea-shores.

*COCHLEARIA ARMORACIA. (Linn.) (E. B. 2403.) *Armoracia, Raphanus rusticanus,* (C. Bauh.) *R. sylvestris,* (J. Bauh.) *Armoracia Rivini,* (Rupp.) *Horse-radish.*

Fl. white. May. Perennial. A doubtful native; gardens.

Root *Armoraciæ radix*, powerfully antiscorbutic, antirheumatic, acrid; taken, cut into small pieces, without chewing, cochl. j., every morning; incisive, used as a sauce. (G.) Root stimulant, diaphoretic, and diuretic, and externally rubefacient; it is used in paralysis, rheumatism, dropsy, and some cutaneous affections; a syrup made with a concentrated infusion of it removes hoarseness arising from relaxation. (Thomson.) Steeped in cold milk, it is said to form one of the best cosmetics. (Burnett.)

*COCHLEARIA OFFICINALIS. (Linn.) (E. B. 551.) *C. hortensis, C. Batava.* (Blackw.) *Common scurvy grass.*

Fl. white. May, June. Annual. Muddy places near the sea.

These herbs abound in valuable principles, which are dissipated by heat; they are the most valuable of antiscorbutics, when eaten raw, or only their juice, ʒj to ʒiiij; an excellent whey may be made from them.

CORONOPUS. (*Senebiera*, De Cand. i. 202.)

*CORONOPUS RUELLI. (E. B. 1660.) *Senebiera coronopus* (D. C.), *Cochleara coronopus, Swine's cress, Wart cress.*

Fl. white. June, September. Annual, biennial. Waste ground.

Properties the same as those of Cochlearia officinalis.

CRAMBE. (De Cand. i. 225.)

*CRAMBE MARITIMA. (Linn.) (E. B. 924.) *Brassica marina Anglica, Sea-cabbage, Sea-colewort, Sea-kale.*

Fl. white. June. Perennial. Sandy sea-shores.

An excellent pot-herb when blanched.

DENTARIA. (De Cand. i. 154.)

DENTARIA DIPHYLLA. (Michx.) North America.
Dried roots used as mustard.

DENTARIA HEPTAPHYLLA.
Root astringent, attenuant.

DRABA. (De Cand. i. 166.)

*DRABA MURALIS. (Linn.) (E. B. 912.) *Wall whitlow grass.*
Fl. white. May. Annual. Limestone mountains and walls.
Opening, detersive; seed, *English pepper*, hot, used for pepper.

EROPHILA. (De Cand. i. 172.)

*EROPHILA VULGARIS. (D. C.) (E. B. 586.) *Draba verna, Paronychia vulgaris, Whitlow grass.*
Fl. white. March, May. Annual. Walls and dry banks.
Qualities the same as those of *Draba muralis.*

ERUCA. (De Cand. i. 223.)

ERUCA SATIVA. (Lamb.) *Brassica eruca, Garden rocket.* South of Europe.
Antiscorbutic, diuretic, flatulent; seeds acrid, stimulant, exciting the stomach; may be substituted for mustard, but are less pungent.

ERYSIMUM. (De Cand. i. 196.)

*ERYSIMUM CHEIRANTHOIDES. (Linn.) (E. B. 942.) *Camelina, Treacle mustard, Worm seed.*
Fl. white. June. Annual. Fields, &c.
Herb, vermifuge, stomachic.

HESPERIS. (De Cand. i. 188.)

*HESPERIS MATRONALIS. (Lamb.) (E. B. 731.) *Dame's violet, Rocket.*
Fl. purple. June. Perennial. Hilly pastures.
Incisive; used in dysury, strangury, and dyspnœa.

IBERIS. (De Cand. i. 178.)

IBERIS AMARA. (Linn.) (E. B. 52.) *Bitter candytuft.*
Fl. white. July. Annual. Chalky soil, rare.
Antiscorbutic; may be eaten in salads.

ISATIS. (De Cand. i. 210.)

*ISATIS TINCTORIA. (Linn.) *Glastum, Isatis, Dyer's woad, Woad.*
Fl. yellow. July. Perennial. Cultivated fields.
Desiccative, astringent; used as a blue dye; and indigo is said to have been manufactured from it. *I. Lusitanica* is also used in dyeing.

LEPIDIUM. (De Cand. i. 203.)

*LEPIDIUM CAMPESTRE. (Brown.) (E. B. 1385.) *Thlaspi campestre, Bastard cress, Mithridate mustard, Mithridate pepperwort.*
Fl. white. July. Annual. Very common.
Seeds acrid, detersive, astringent; cultivated as a salad.

LEPIDIUM IBERIS. (Linn.) *Sciatica cress.* South of Europe.
Made into a poultice with curd, used in sciatica.

*LEPIDIUM LATIFOLIUM. (Linn.) (E. B. 182.) *Piperitis, Broad-leaved pepperwort, Dittander.*

Fl. white. July. Perennial. Wet places near the sea.

Acrid, irritative, useful in sciatica; infused in beer, facilitates delivery; sialogogue.

**LEPIDIUM SATIVUM. (Linn.) *Nasturtium hortense.* (Dodon.) *Garden cress.* Native of Asia.

Cultivated as a salad. Seeds opening, incisive, antiscorbutic. (G.) Seed used in India by the native practitioners as a gentle stimulant. Bruised and mixed with lime-juice, it is deemed useful for checking local inflammation. Taken whole in half-drachm doses, it answers as a gentle and warm aperient. (O'Sh.)

LUNARIA. (De Cand. i. 156.)

**LUNARIA REDIVIVA. (Linn.) *Honesty, Moonwort, Satin flower.*

Fl. purple, fragrant. May, June. Perennial. South of Europe.

Roots detersive; leaves diuretic; seeds extremely acrid, used in epilepsy.

MATHIOLA. (De Cand. i. 132.)

*MATHIOLA INCANA. (Brown.) (E. B. 1935.) *Cheiranthus incanus, Leucojum album, Stock gilliflower, Hoary shrubby stock.*

Fl. purple, red, white, or variegated. May, June. Biennial. Cliffs near Hastings. Doubtful native.

Flowers used in inflammation, and to cleanse ulcers.

NASTURTIUM. (De Cand. i. 137.)

*NASTURTIUM AMPHIBIUM. (Brown.) (E. B. 1840.) *Raphanus aquaticus, Sisymbrium amphibium, Amphibious cress, Water radish.*

Fl. yellow. June, August. Perennial. Watery places.

Acrid, used in scurvy, eaten in salads.

*NASTURTIUM OFFICINALE. (Brown.) (E. B. 155.) *Nasturtium aquaticum, Sisymbrium aquaticum, Water cresses.*

Fl. white. July. Perennial. Brooks, &c., common.

Depurative and antiscorbutic, used in obstructions and calculous cases.

RAPHANUS. (De Cand. i. 228.)

*RAPHANUS RAPHANISTRUM. (Linn.) (E. B. 856.) *Jointed charlock, Wild mustard.*

Fl. yellow, veined. June, July. Annual. Corn-fields.

**RAPHANUS SATIVUS. (Linn.) *R. hortensis, Common radish*

Fl. white, with violet veins. July. Annual. Native of Asia.

The principal varieties cultivated are,

α. *Rotundus.* Root subglobose. White or red.

β. *Oblongus.* Root oblong. White or red.

γ. *Niger.* Root hard; black; oblong, rarely round.

Aperitive, diuretic, and excite the appetite; seeds attenuant, pressed for oil. (G.) They are said by Von Martius to be emetic. The roots are diuretic and laxative; the expressed juice is sometimes used on the continent. (L.)

SINAPIS. (De Cand. i. 217.)

*SINAPIS ALBA. (Linn.) (E. B. 1677.) *White mustard.*

Fl. yellow. July. Annual. Waste ground.

Seeds ground for mustard, but not so stimulant. (G.) Seeds powerfully acrid and pungent, employed in the state of flour in the common table mustard, and in their entire state as stimulating cathartics; ulceration of the intestines has, however, been produced by the use of them, when they have been lodged in the vermiform appendages of the cæcum. (L.)

*SINAPIS ARVENSIS. (Linn.) (E. B. 1748.) *Eruca arvensis vulgaris.* (Rupp.) *Irion.* (Fuch.) *Yellow charlock.*

Fl. yellow. June. Annual. Waste ground.

Seeds detersive and digestive; when given to birds instead of rape, they heat and kill them; ground for mustard, but of inferior flavour.

SINAPIS CHINENSIS. (Linn.) *Chinese mustard.* China.

Seeds considered by the Mahometan and Hindoo practitioners stimulant, laxative, and stomachic. (L.)

*SINAPIS NIGRA. (Linn.) (E. B. 969.) *Eruca rapi folio.* (Rupp.) *Sinapi, Common mustard.*

Fl. yellow. June, Annual. Waste ground.

Seeds, *Sinapis semina*, unbruised, coch. min. j. stimulant, and generally laxative; cure vernal agues; farina of the seeds used as a rubefacient, and as seasoning; when mixed with water or vinegar, has a bitter flavour, which after some time goes off; hull of the seed sold for ground-pepper, under the name of P. D., *i.e.*, pepper dust, and pressed for oil. (G.) Seeds acrid, stimulating, and bitter; the oil is purgative, and has been proposed as a rubefacient in paralysis, and as a vesicant; the distilled water has been used in itch; the flour forms an useful local irritant in the form of a poultice. (L.)

SINAPIS DICHOTORNA, *Sersoon.*

SINAPIS RAMOSA. *Raee.*

SINAPIS GLAUCA, *Sheta sersha. Toria.*

SINAPIS JUNCEA. (Linn.) *Bunga serson.*

Seeds pressed for oil. (G.) Employed in India as mustard; the last three species extensively cultivated for their oil. (O'Sh.)

SISYMBRIUM (De Cand. i. 190.)

*SISYMBRIUM IRIO. (Linn.) (E. B. 1631.) *Erysimum latifolium, Broad-leaved hedge mustard, London rocket.*

Fl. yellow. July, August. Annual. Waste places.

Herb used as a heating pot-herb.

*SISYMBRIUM OFFICINALE. (Scop.) (E. B. 735.) *Erysimum officinale, Hedge mustard.*

Fl. yellow. June, July. Annual. Waysides, common.

Antiscorbutic, used in coughs; externally detersive; seeds acrid, lithontriptic.

*SISYMBRIUM SOPHIA. (Linn) (E. B. 963.) *Sophia chirurgorum, Flixweed.*

Fl. yellow. August. Annual. Waste places.

Vulnerary, astringent, detersive.

TEESDALIA. (De Cand. i. 178.)

*TEESDALIA IBERIS. (D. C.) (E. B. 327.) *Bursa pastoris minor, Iberis nudicaulis.*

TEESDALIA NUDICAULIS. (Brown.) *Lesser shepherd's purse, Naked-stalked teesdalia.*

Fl. white. May, June. Annual. Battersea, common.

Antiscorbutic, may be eaten in salads.

THLASPI. (De Cand. i. 175.)

*THLASPI ARVENSE. (Linn.) (E. B. 1659.) *Mithridate mustard, Penny cress, Treacle mustard.*

Fl. white. June, July. Annual. Fields and road-sides, rare.

Seeds acrid, detersive, astringent.

ORDER 12.—CAPPARIDEÆ. (De Cand. i. 237.)

Sepals 4, either nearly distinct, equal or unequal, or cohering in a tube, the limb of which is variable in form; *petals* 4, cruciate, usually unguiculate and unequal; *stamens* almost perigynous, very seldom tetradynamous, most frequently arranged in some high multiple of a quarternary number, definite, or indefinite; *disk* hemispherical or elongated after bearing glands; *ovary* stalked; *style* none, or filiform; *fruit* either pod-shaped and dehiscent, or baccate, one-celled, very rarely one-seeded, most frequently with two polyspermous placentæ; *seeds* generally reniform, without albumen, but with the lining of the testa tumid, attached to the margin of the valves; *embryo* incurved; *cotyledons* foliaceous, flattish. *Herbaceous* plants, *shrubs*, or even *trees*, without true stipules, but sometimes with spines in their place; *leaves* alternate, stalked, undivided, or palmate; *flowers* in no particular arrangement.

CAPPARIS. (De Cand. i. 245.)

CAPPARIS CYNOPHALLOPHORA. (Linn.) Caribbean Islands.

An infusion of the acrid root has been recommended as a specific in dropsy.

CAPPARIS PULCHERRIMA. (Jacq.) *Carborescens.* Carthagena.

A poisonous fruit, called *Fruta de burro*, is supposed to belong to this or an allied species.

CAPPARIS SPINOSA. (Linn.) *Caper tree.* South of Europe.

The young flower-buds are the *pickled capers* of the shops; they are esteemed antiscorbutic, stimulant, and aperient. (L.) Bark of the root acerb, discussive, diuretic, splenic; useful in gout. (G.)

CRATÆVA. (De Cand. i. 243.)

CRATÆVA GYNANDRA. (Linn.) *Garlick pear.* Jamaica.

Bark of root said to blister like cantharides.

CRATÆVA TAPIA. (Linn.) West Indies.

Bark bitter and tonic; has been used in the cure of intermittent fevers.

POLANISIA. (De Cand. i. 242.)

POLANISIA ICOSANDRA. (Wight and Arm.) *Cleome icosandra*, and *dodecandra.* (Linn.) *C. viscosa.* (Linn.) *P. viscosa.* (De Cand.) *Bastard mustard.* East Indies.

Used in Cochin-China as a counter-irritant, in the same way as sinapisms in Europe, and as a vesicant. The root used as a vermifuge in the West Indies (Linn.); it is also employed as a sauce. (G.)

Order 13.—FLACOURTIANEÆ. (De Cand. i. 255.)

Sepals 4—7, definite, slightly cohering at base; *petals* equal to the sepals in number, and alternating with them, seldom wanting; *stamens* hypogynous, either equal to the petals in number, or some multiple of them, sometimes changed into nectariferous scales; *ovary* roundish, distinct, sessile, or slightly stalked: *style* none, or filiform; *stigmas* as many as the valves of the ovary, more or less distinct; *fruit* one-celled, either fleshy and indehiscent, or capsular, with four or five valves, the centre filled with a thin pulp; *seeds* few, thick, usually enveloped in a pellicle formed by the withered pulp, attached to the surface of the valves in a branched manner, not in a line, as in Violaceæ and Passifloraceæ; *albumen* fleshy, rather oily; *embryo* straight in the axis, with the radicle turned to the hilum, and therefore usually superior; *cotyledons* flat, foliaceous. *Shrubs*, or small *trees*, with alternate simple *leaves*, without stipules; *peduncles* axillary, many-flowered.

Chaulmoogra. (Roxb. fl. Ind. iii. 836.)

Chaulmoogra odorata. *Chaulmoogra.* East Indies.

The seeds, beaten up with butter into a soft mass, and applied thrice a day to the parts affected, are used extensively by the natives of India in the cure of cutaneous diseases.

Flacourtia. (De Cand. i. 256.)

Flacourtia cataphracta. (Roxb.) East Indies.

Small leaves and shoots used in India as gentle astringents, in the dose of half a drachm in powder. An infusion of the bark in cold water is also employed as a remedy in hoarseness. (O'Sh.)

Flacourtia sepiaria. (Roxb.) *Courou moelli.* East Indies.

Fruit delicious, eatable; a decoction of the bark in oil used against gout; a decoction of the leaves and root in cow's milk used as an antidote against the bite of serpents.

The fruits of F. ramontschi, and F. sapida, are also eaten.

Hydnocarpus. (De Cand. i. 257. *Hydrocarpus.* Lindl.)

Hydnocarpus inebrians. (Vahl.) *H. venenata.* Ceylon.

Bears a poisonous fruit, which, when eaten, occasions giddiness and dangerous intoxication.

Stigmarota. (De Cand. i. 257.)

Stigmarota Jangomas. (Lour.) *Spina spinarum, Jangomas.* Java.

Fruit eaten.

Order 14.—BIXINEÆ. (De Cand. i. 259.)

Sepals 4—7, either distinct, or cohering at the base, with an imbricated æstivation; *petals* five, like the sepals, or wanting; *stamens* indefinite, distinct, inserted upon a receptacle at the base of the calyx; *anthers* two-celled; *ovary* superior, sessile, one-celled; *ovules* proceeding from four to seven parietal placentæ; *style* single, or in two or four divisions; *fruit* capsular, or berried, one-celled, many-seeded; *seeds* attached to parietal placentæ, or enveloped in pulp; *albumen* either fleshy, or very thin; *embryo* included, either straightish, or curved; *cotyledons* leafy; *radicle* pointing to the hilum. *Trees*, or *shrubs*, with alternate simple *leaves*; *peduncles* axillary, one or many flowered, with bracts.

Bixa.

Bixa Orellana. (Linn.) *Onotho incolarum.* (Kunth.) *Orleana.* (Pluk.) *Uruku.* (Sloan.) *Annotto*, or *arnotto plant.* Tropical parts of America.

The seeds are covered with an orange red waxen pulp, or pellicle,

which substance is the *annotto* or *arnotto* of the shops; it is chiefly used for colouring cheese, and in the preparation of chocolate; but was formerly reckoned an antidote to the poison of the Manioc, or Janipha manihot.

Order 15.—CISTINEÆ. (De Cand. i. 263.)

Sepals five, persistent, continuous, with the pedicle generally unequal, two exterior being smaller than the others, and sometimes evanescent, three interior contorted in æstivation; *petals* five, hypogynous, caducous, equal, contorted in æstivation, but in a direction opposite to that of the sepals; *stamens* indefinite, few or many, hypogynous, erect; *filaments* free; *anthers* ovate, bilocular, birimose, innate; *ovary* free; *style* one, filiform; *stigma* simple; *capsule* of 3—5, (seldom 10,) valves; in some having in their centre a placentary longitudinal nerve, and then the capsule is one-celled; in others the middle nerve projects internally, forming a more or less perfect septum, and then the capsule is completely or incompletely multilocular; the *seeds* are therefore either parietal, or adnate to the septum, numerous, and small; *albumen* farinose; *embryo* spiral or curved, within the *albumen*. *Shrubs*, or *herbs*, having simple, entire, or subdental opposite *leaves* and racemose inflorescence.

The plants of this order are astringent and pectoral.

Cistus. (De Cand. i. 263.)

Cistus Creticus. (Linn.) *Cistus tauricus.* (Presl.) *Ladanum Creticum.* (P. Alpin.) Crete, Syria.

The gum resin *Ladanum* is produced principally by this species; esteemed as a stimulant and emmenagogue; it has also been recommended in chronic catarrh.

Cistus ladaniferus. (Linn.) C. Laurefolius. (Linn.); and C. Ledon. (Lamb.) Natives of the South of France and Spain, are also said to yield the same substance. (L.) The inferior sort. (Gray.)

Cistus incanus. (Linn.) Spain.

The parasitic plant *Hypocistus*, *Cytinus hypocistus*, grows chiefly upon this plant.

Cistus salvifolius. (Linn.) *C. fœmina*, *Female holly rose.* South of France.

Cistus villosus. (Lamb.) *C. mas.*, *Male holly rose.* Spain.

Leaves and flowers astringent.

Helianthemum. (De Cand. i. 266.)

Helianthemum fumana. (Mill.) *Cistus fumana.* France.

*Helianthemum guttatum. (Mill.) (E. B. 544.) *Cistus guttatus*, *Spotted annual rock rose.*

Fl. yellow, spotted at the base. June, July. Annual. Jersey.

*Helianthemum vulgare. (Gaertn.) (E. B. 1321.) *Cistus helianthemum*, *Helianthemum anglicum luteum*, *Dwarf cistus*, *Little sunflower.*

Fl. yellow. July, August. Perennial. Dry pastures.

These and the other species are astringent.

Order 16.—VIOLAREÆ. (De Cand. i. 287.)

Calyx of five persistent sepals, usually elongated at the base; *petals* five, alternate with the sepals, hypogynous, equal or unequal, lower one spurred, or cuculate; *stamens* five, alternate with the petals, inserted on a thalamus; *anthers* bilocular, often free and adpressed to the ovary, sometimes more or less united at the base into

a monadelphous disk; *filaments* dilated; *ovary* one-celled, with parietal placentas; *style* one, simple; *stigma* slightly lateral, hooded; *capsule* three-valved, many-seeded, *albumen* fleshy; *embryo* straight. *Herbs*, or *shrubs*, generally with alternate stipulate *leaves*; inflorescence various.

IONIDIUM. (De Cand. i. 310.)

IONIDIUM MICROPHYLLUM. (Kunth.) *Cuichunculli.* Quito, South America.

IONIDIUM POYAYA. (Lindl.) *Poaya do campo.* South America.

Roots emetic, collected as a substitute for true ipecacuanha in Brazil. (G.) These Ionidia deserve to be attentively studied with reference to their medicinal properties. (L.) *Cuichunchulli* has been recommended as a remedy for elephantiasis.

IONIDIUM BREVICAULE. (Mart.)

IONIDIUM MAYTENSILLO.

IONIDIUM PARVIFLORUM. (Vent.) *Viola parviflora, V. Ibonbou?*

IONIDIUM URTICI-FLORUM.

Also furnish similar active principles.

IONIDIUM SUFFRUTICOSUM. (Ging. mss.) *V a suffruticosa.* East Indies.

Employed in India as a demulcent. (O'Sh.)

POMBALIA. (De Cand. i. 307.)

POMBALIA ITUBU. (Ging. mss.) *Ionidium ipecacuanha, Viola ipecacuanha, Poaya branca, Poaya da praja.* Brazil.

Root, *white ipecacuanha*, emetic, milder than the false kinds, but mostly adulterated with them; dose, gr. v. to ℈ ij.; in small doses, gr. ss. to gr. ij.; given frequently it is diaphoretic, expectorant, and stomachic. In both methods it is antidysenteric, gr. v., or enough to excite nausea, given an hour before the fit, has been successful in intermittents.

VIOLA. (De Cand. i. 291.)

*VIOLA CANINA. (Linn.) (E. B. 620.) *Viola sylvestris.* (Volck.) *Viola inodora.* (Dill.) *Dog violet, Marsh violet.*

Fl. blue. April, August. Perennial. Woods and banks.

Considered as a depurative, and recommended for the cure of cutaneous affections; root emetic.

*VIOLA ODORATA. (Linn.) (E. B. 619.) *Viola officinarum.* (Rupp.) *Flos trinitatis.* (Camer.) *Jacea. Sweet violet, Purple violet.*

Fl. deep purple, fragrant. March, April. Perennial. Woods and banks.

Petals made into syrup.

*VIOLA TRICOLOR. (Linn.) (E. B. 1287.) *Heart's-ease, Pansy.*

Fl. of one, two, or three colours, blue, yellow, and white. Whole summer. Annual. Banks.

The flowers of these three are moistening and pectoral; seeds diuretic; roots expectorant, slightly emetic, and in doses of ℈ j. cathartic. (G.) Leaves of V. tricolor employed in Italy in the cure of Tinea capitis. (L.) Leaves of flower used instead of those of V. odorata in syrup.

VIOLA PEDATA. (Linn.) *American violet, Viola P. U. S.*

Root emetic.

Order 17.—DROSERACEÆ. (De Cand. i. 317.)

Sepals five, persistent, imbricated in æstivation; *petals* five, distinct, hypogynous, alternate with the sepals; *stamens* free, alternate with the petals, and equal to them in number, or double, triple, or quadruple their number; *anthers* two-celled; *ovary* one; *styles* 3—5, united at the base, or distinct; bifid or ramose; *capsule* 1—3 celled, 3—5 valved, margin of valves bent inwards, dehiscing at the apex; *seeds* attached to a central nerve, or only to the base, naked, or enclosed in a thin follicular arillus; *albumen* cartilaginous or fleshy; *embryo* straight, with the radicle towards the hilum. *Herbaceous* plants, with alternate *leaves*, having stipulary fringes, and a circinate vernation; *peduncles*, when young, circinate.

Drosera. (De Cand. i. 317.)

*Drosera rotundifolia. (Linn.) (E. B. 867.) *Rosella vulgaris.* (Berg.) *Rosa solis, Ros solis.* (Thal.) *Rosella, Round-leaved sundew.*

Fl. white. July. Annual. Bogs and moist heaths.

Acrid, anti-arthritic, detersive, externally rubefacient.

Parnassia. (De Cand. i. 320.)

*Parnassia palustris. (Linn.) (E. B. 82.) *Cistus palustris.* (Volck.) *Hepatica alba.* (Cord.) *Gramen Parnassi.* (C. Bauh.) *Grass of Parnassus.*

Fl. white, with green pellucid nectaries. August, October. Perennial. Bogs and wet places.

Juice ophthalmic; seeds diuretic, aperitive.

Order 18.—RESEDACEÆ. (De Cand., Bot. Gal. i. 66.)

Sepals 4—6, continuous, with the pedicle persistent; *petals* 4—6, alternate, with the sepals hypogynous, unequal, the upper with squamiform, palmatipartite limbs; the lateral 2—3 lobed, and the lower entire; *stamens* 10—24, hypogynous; *filaments* generally somewhat united at the base, monadelphous, or polyadelphous; *anthers* two-celled; *nectariferous scales* very obtuse, inserted on the torus beneath the stamens; *torus* either short or stipitiform; *ovaries* 3—6, monostylous, sometimes free, inserted on the upper part of the torus; sometimes united into one ovary, which is then crowned by 3—6 short conical styles; the *carpels* are therefore either free, folliculiform, few-seeded, and dehiscing internally, or united into a 3—6 valved capsule, gaping at the apex, one-celled, many-seeded; *placentas* 3—6, adnate to the middle of the carpels or valves, many-seeded; sometimes in the free carpels, 1—2 seeded; *seeds* subpendulous from the placenta in a double row, and furnished with a crustaceous testa; *albumen* none, or thin and carnoso membraneous; *embryo* arcuate; *cotyledons* fleshy; *radicle* superior. *Herbs* with alternate leaves; *flowers* with short pedicles.

Reseda.

*Reseda lutea. (Linn.) (E. B. 321.) *R. vulgaris, Wild mignonette, Wild rocket.*

Fl. yellow. July, August. Annual. Waste places.

Discussive, used externally to dissipate inflammations and tumours; dyes yellow.

*Reseda luteola. (Linn.) (E. B. 320.) *Dyers weed, Yellow weed, Weld.*

Fl. yellow. July. Annual. Waste places on chalky soil.

Used in dyeing yellow and green; *French weld*, stem much finer than the English.

Order 19.—POLYGALEÆ. (De Cand. i. 321.)

Sepals five, imbricate in æstivation, the two interior generally petaliform, the three exterior smaller, two of them are anterior, and sometimes united, the third is posterior; *petals* 3—5, hypogynous, more or less united by means of the tube of the stamens, (rarely distinct); *filaments* of stamens adherent to the petals, monadelphous, divided at the apex into two opposite equal phalanxes; *anthers* eight, one celled, innate, dehiscing by pores at the apex; *ovary* one, free, two-celled, rarely one or three-celled; *style* one; *stigma* one; *pericarp* capsular, or drupaceous, two or one-celled, valves septigerous in the middle; *seeds* pendulous, solitary, often with a carunculate arillus at the base; *embryo* straight, generally in the axis of a fleshy albumen, or (rarely) exalbuminous, in which case the endopleura is turned. *Herbs*, or *shrubs*, with entire, generally alternate *leaves*, articulated on the stem.

Krameria. (De Cand. i. 341.)

Krameria ixina. (Linn.) St. Domingo.

Krameria triandra. (Ruiz et Pav.) Peru.

Root. *Rhatany*, *Rhatania*, *Krameriæ radix*, astringent and tonic. (G.) The extract of K. triandra is styptic and tonic, operates powerfully upon tumours, resolving and restoring tone to those parts; corrects and cures all kinds of ulcers, when applied to them in plaisters; when administered internally, extract of Rhatany is apt to be rejected by the stomach, till three or four doses have been taken; if the stomach will not retain it, it should be given in pills, the patient immediately chewing a little lemon, and drinking and gargling with vinegar diluted with water. (Ruiz.) Commonly used in Peru as tooth-powder. (L.)

Monnina. (De Cand. i. 338.)

Monnina polystachya. (Ruiz et Pav.) Peruvian Andes.

The bark of the root, when fresh pounded and moulded into balls, or the dry bark, is detergent; it readily froths when agitated in water, and is used by the Peruvians as a substitute for soap; the silversmiths of Huanuco employ it for cleansing and polishing wrought silver. Antidysenteric, used with great success in the cure of dysenteries and irritating diarrhœas in Peru, where it is preferred to quassia. (Ruiz, L.)

Monnina salcifolia. (Fl. Peruv.) Peru.

Has the same qualities.

Polygala. (De Cand. i. 321.)

Polygala amara. (Linn.) *Polygala myrtifolia.* (Dillen.) *Polygala Austriaca.* (Cranz.) *Polygala uliginosa.* (Reich.) Europe.

*Polygala vulgaris. (Linn.) (E. B. 76.) *Common milk-wort.*

Fl. blue, pink, or white. January, August. Perennial. Dry hills, pastures, &c.

Roots may be substituted for rattlesnake root; dose in powder ʒss. to ʒj., useful in pleurisy; herbs bitter, diaphoretic, in infusion ℥iiij., taken daily, promote expectoration, and are used in catarrhous coughs. (G.)

Polygala Caracasana. (Kunth.) Caracas.

Root with a taste similar to P. senega, but not altogether equal to it. (L.)

POLYGALA CHAMÆBUXUS. (Linn.) Mountain woods, Europe.
Qualities similar to those of P. senega.

POLYGALA CROTALARIOÏDES. (Buch.) Nepal.
A reputed cure for the bite of venomous reptiles. (G.) Used as a snake antidote in Nepal and the Himalayas. (O'Sh.)

POLYGALA GLANDULOSA. (Kunth.)
Emetic.

POLYGALA POAYA. (*Martius Spec. Mat. Med. Bras.*) Brazil.
An active emetic; root used successfully in the bilious fevers of Brazil; when fresh, scarcely inferior to ipecacuanha. (Martius.)

POLYGALA RUBELLA. (Pursh.) *P. polygama, Bitter polygala,* United States.
A strong bitter taste pervades all the parts; in small doses its infusion is found useful as a tonic and stimulant to the digestive organs; in large doses it opens the body, and excites diaphoresis. (L.)

POLYGALA SANGUINEA. (Linn.) Carolina.
A supposed antidote to the bite of poisonous reptiles. (L.)

POLYGALA SENEGA. (Linn.) *Rattlesnake root. Seneka, Snake root.* United States.
Roots, *Senega, Senegæ radix*, diaphoretic, diuretic, used in America against the bite of the rattlesnake, either in powder ℈j. to ℈ij., or ʒj. boiled in ℔jss., of water to ℔j., and given by ʒij. at a time; black snake root is used for it. (G.) Root unpleasant, somewhat acid and acrid; it acts as a sudorific and expectorant in small doses, and as an emetic and cathartic in large ones; employed in pneumonia, asthma, croup, dropsy, chronic rheumatism, and especially in such uterine complaints as amenorrhœa: Dr. Archer has extravagantly praised it in cynanche trachealis. (L.) An exceedingly valuable remedy in the latter stages of bronchial or pulmonary inflammation, when this disease occurs in aged, debilitated, and torpid constitutions. It appears to re-establish a healthy condition of the secreting organs, to promote the resolution of the morbid deposits, and to give strength to the system. (Pereira.)

POLYGALA THEEZANS. (Linn.) Java, Japan.
Mixed with tea in Japan.

POLYGALA ULIGINOSA. (Rehb.) *P. amara.* Germany.
Whole plant bitter, much extolled by Van Swieten and others in pulmonary complaints and spitting of blood. (L.)

POLYGALA VENENOSA. (Juss.)
Said by Commerson to be a poisonous plant, so much dreaded by the Javanese, that they are unwilling to touch it. (L.)

SOULAMEA. (De Cand. i. 335.)

SOULAMEA AMARA. (Lamb.) *Rex amaroris.* Coast of Moluccas.
All the parts, especially the roots and fruit, intensely bitter; employed in the Malayan Archipelago with extraordinary success in cholera and pleurisy, and most valuable as a febrifuge. (L.) Also used in ague. (O'Sh.)

Order 20.—PITTOSPOREÆ. (De Cand. i. 345.)

Sepals five, deciduous, either distinct, or partially cohering, æstivation imbricated; *stamens* five, hypogynous, sometimes slightly cohering, æstivation imbricated, distinct, alternate with the petals; *ovary* single, distinct, with the cells or the placenta 2—5 in number, and many-seeded; *style* one; *stigmas* equal in number to the placentæ; *fruit* capsular, or berried, with many-seeded cells, which are sometimes incomplete; *seeds* often covered with a glutinous or resinous pulp; *embryo* minute, near the hilum, lying in fleshy albumen; *radicle* rather long; *cotyledons* very short. *Trees* or *shrubs; leaves* simple, alternate, without stipules, usually entire; *flowers* terminal, or axillary, sometimes polygamous.

Several species have a liquid resin round the seeds, which deserves examination. (O'Sh.)

Billardiera. (De Cand. i. 345.)

Billardiera scandens. (Smith.) New Holland.
Flesh of the berry eatable.

Pittosporum. (De Cand. i. 346.)

Pittosporum Tobira. (Ait.) Japan.
Seeds surrounded by a kind of resinous birdlime.

Order 21.—CARYOPHYLLEÆ. (De Cand. i. 351.)

Calyx of four or five sepals, continuous with the pedicle, either free or united into a tube, imbricated in æstivation, generally persistent; *petals* four or five, (very rarely none,) inserted on a more or less elevated torus, hypogynous, alternate with the sepals, unguiculate, with an entire or bifid spreading limb, often furnished with petaloid scales in the throat; *stamens* equal to, or double the number of the petals, inserted on the torus; *filaments* subulate; *anthers* two-celled; *ovary* simple, 2—5 valved, inserted at the apex of the torus, and crowned by an equal number of styles; *capsule* of 2—5 valves, united at the base, opening at the apex, either one-celled, or 2—5 celled; septa protruding from the middle of the valves, incomplete, or continuous to the axis; *placenta* central; *seeds* numerous, rarely few, or defined; *albumen* mealy; *embryo* curved round the albumen, rarely straight; *radicle* directed towards the hilum. *Herbs*, or under *shrubs*, with knotted stems, opposite, entire, and often connate *leaves* and terminal *flowers*.

Arenaria. (De Cand. i. 400.)

*Arenaria media. (Linn.) (E. B. 958.) *A. marina*, *Sea-side sandwort*, *Sea spurry*.
Fl. purple. June, July. Annual. Sea-coast.
Externally used in whitlows and other inflammations; very succulent; when pickled sold for samphire.

*Arenaria peploides. (Linn.) (E. B. 189.) *Adenarum p.*, *Sea sandwort*.
Fl. white. July. Perennial. Sandy shores.
Herb fermented and made into *Iceland beer*.

Cerastium. (De Cand. i. 414.)

*Cerastium aquaticum. (E. B. 538.) *Alsine aquatica major*, *Great marsh chickweed*.
Fl. white. July. Perennial. Sides of ditches in England.

*CERASTIUM ARVENSE. (Linn.) (E. B. 93.) *Field chickweed, Corn mouse-ear.*

Fl. white. June, July. Perennial. Dry sandy places in England.

*CERASTIUM VISCOSUM. (Linn.) (E. B. 790.) *Alsine hirsuta altera viscosa, Narrow-leaved mouse-ear chickweed.*

Fl. white. April, September. Annual. Pastures.

*CERASTIUM VULGATUM. (Linn.) (E. B. 789.) *Alsine hirsuta myosotis, Broad-leaved mouse-ear chickweed.*

Fl. white. April, June. Annual. Fields and pastures.

Cooling moistening herbs, nourishing cattle; used as spinach.

DIANTHUS. (De Cand. i. 355.)

DIANTHUS ARENARIUS. (Linn.) *Maiden pink, Stone pink.* North of Europe.

*DIANTHUS ARMERIA. (Linn.) (E. B. 317.) *Caryophillus pratensis, Deptford pink.*

Fl. rose-coloured with white spots. July, August. Annual. Fields.

**DIANTHUS BARBATUS. (Linn.) (Bot. M. 205.) *Sweet William.*

Fl. pink, purple, or white, variously spotted. June, August. Perennial. South of France.

DIANTHUS CARTHUSIANORUM. (Linn.) *Œillet des chartreux.* Europe.

*DIANTHUS CARYOPHYLLUS. (Linn.) (E. B. 214.) *Caryophyllus ruber, Clove gilliflower, Clove pink, Carnation.*

Fl. pink, white, or variegated. July. Perennial. South of England.

DIANTHUS SUPERBUS. (Linn.) *Fringed pink.*

The flowers, *tunicæ*, of D. caryophyllus are cephalic, cardiac, antispasmodic, nervine; in doses of ℈j. to ʒj. useful in heartburn and contagious fevers; the odour is improved by drying. The other species of dianthus have similar qualities, but weaker. (G.)

GYPSOPHILA. (De Cand. i. 351.)

GYPSOPHILA MURALIS. (Linn.) France, Germany.

GYPSOPHILA SAXIFRAGA. (Linn.) South of Europe.

GYPSOPHILA STRUTHIUM. (Linn.) Spain.

Lithontriptic, and used for soapwort in lues; saponaceous and are used for washing.

HOLOSTEUM. (De Cand. i. 393.)

*HOLOSTEUM UMBELLATUM. (Linn.) (E. B. 27.) *Caryophyllus arvensis, Field pink, Umbelliferous jagged chickweed.*

Fl. white, or reddish. April. Annual. Rare. Norfolk.

Cooling, moistening, used as spinach.

LYCHNIS. (De Cand. i. 385.)

LYCHNIS CŒLI ROSA. (Lamb.) *Agrostemma cœli rosa.* Sicily.

**LYCHNIS CORONARIA. (Lamb.) (Bot. Mag. 24.) *Agrostemma coronaria, Crown lychnis.*

Fl. red or white, single or double. July, August. Perennial. Native of Italy.

LYCHNIS FLOS JOVIS. (Linn.) *Agrostemma flos Jovis.*

*LYCHNIS GITHAGO. (Lamb.) (E. B. 741.) *Agrostemma githago, Corn cockle.*

Fl. purple. June, July. Annual. Corn-fields.
Roots vulnerary, astringent; seeds purgative.

*LYCHNIS DIOICA. (Linn.) (E. B. 1580.) *Saponaria dioica.* (Willd.)
Var. 1. DIURNA. *Red Campion, Campion cuckoo flower.*
Fl. red, scentless. May—September. Perennial. Hedges, ditches, and moist woods.
Var. 2. VESPERTINA. *White Campion, or Cuckoo flower, Bachelor's button.*
Fl. White. June, July. Perennial. Road-sides, hedges.
*LYCHNIS FLOS CUCULI. (Linn.) (E. B. 573.) *Cuckoo flower, Meadow pink, Ragged robin.*
Fl. rose-coloured. June. Perennial. Moist meadows.
*LYCHNIS VISCARIA. (Linn.) (E. B. 788.) *Red German catchfly.*
Fl. rose-coloured. June. Perennial. Scotland.
Roots cordial.

SAPONARIA. (De Cand. i. 365.)

*SAPONARIA OFFICINALIS. (Linn.) (E. B. 1060.) *Lychnis saponaria.* (Volck.) *Saponaria, Soap-wort.*
Fl. rose-coloured. July, August. Perennial. Road-sides.
Attenuating, opening, antivenereal, saponaceous.
SAPONARIA VACCARIA. (Linn.) *Cow basil, Vaccaria.* Europe.
Seed heating, diuretic; the plant is said to increase the lacteal secretions of cows fed upon it.

SILENE. (De Cand. i. 367.)

*SILENE ARMERIA. (Linn.) (E. B. 1398.) *Behen album, Lobel's catchfly.*
Fl. purple. July. Annual. Commonly in gardens.
SILENE BEHEN. (Linn.)
*SILENE INFLATA. (Smith.) (E. B. 1081.) *Behen album, Cucubalus behen, Spatling poppy, White behen, White bottle.*
Fl. white. August. Perennial. Pastures and road-sides.
The root of the *White Behen* was used by the Greeks and Arabs of the middle ages. It is said to be slightly bitter or acrid, and odorous. (Guibourt.)
SILENE MUSCIPULA. (Linn.) *Red catchfly.* Spain.
Roots cordial.
SILENE SAXIFRAGA. (Linn.) *Saxifraga antiquorum, Great saxifrage.* Alps.
Herb used in calculous disorders.
SILENE VIRGINICA. (Linn.) United States.
Root said to be anthelmintic.

SPERGULA. (De Cand. 394.)

*SPERGULA ARVENSIS. (Linn.) (E. B. 1535.) *Corn spurrey.*
Fl. white. June. August. Annual. Corn-fields.

STELLARIA. (De Cand. i. 396.)

STELLARIA ALSINE.
*STELLARIA HOLOSTEA. (Linn.) (E. B. 511.) *Greater Stichwort.*
Fl. white. May. Perennial. Hedges, &c.
STELLARIA MEDIA. (Smith.) (E. B. 537.) *Alsine media, Chickweed.*

Fl. white. The whole year. Annual. Road-sides.
All cooling, moistening herbs, nourishing cattle; used as spinach.

ORDER 22.—LINEÆ. (De Cand. i. 423.)

Sepals 3—4, frequently five, persistent; *petals* equal in number to the sepals, hypogynous, with a twisted æstivation, caducous; *stamens* equal in number to the petals, and alternating with them, cohering at the base into a monadelphous ring, with an abortive filament, or tooth between each; *anthers* ovate, innate; *ovary* sub-globose, with as many cells as there are sepals, rarely fewer; *styles* equal in number to the cells; *capsule* globose, pointed with the base of the styles, opening with two valves at the apex; *seeds* in each cell single, ovate, compressed, inverted; *albumen* often absent; *embryo* straight, fleshy. *Herbs*, or *shrubs*, with entire exstipulate *leaves*, and pedunculated inflorescence.

LINUM. (De Cand. i. 423.)

*LINUM CATHARTICUM. (Linn.) (E. B. 382.) *Dwarf wild flax*, *Mill mountain*, *Purging flax*.

Fl. white. June, July. Annual. Pastures.

Bitter, and powerfully cathartic; a drachm of the dried plant is a convenient purgative, or we may employ an infusion of a handful of the recent plant. (Pereira.) Purgative in doses of ʒss. to ʒj. (G.) Leaves, when fresh, strongly purgative, but uncertain in their action. (O'Sh.)

LINUM SELAGINOIDES. (Lamb.) Monte Video and Chili.

Herb bitter and aperitive.

*LINUM USITATISSIMUM. (Linn.) (E. B. 1357.) *Linum arvense.* (C. Bauh.) *Common flax.*

Fl. purplish blue. July. Annual. Corn-fields.

Seeds, *Lini usitatissimi semina*, *Linseed*, *Lini semina*, emollient, diuretic; meal, *Lini farina*, used for cataplasms; imported from Russia, Poland, and North America; yield oil, *Lini oleum*, *Linseed oil*; *Lini placenta*, *Linseed cake*, left after the oil has been pressed out, used for feeding cattle and broken-winded horses. (G.)

ORDER 23.—MALVACEÆ. (De Cand. i. 429.)

Sepals usually five, rarely three or four, more or less united at the base, valvate in æstivation, often bearing external sepals or bracts, forming an involucre, or outer calyx; *petals* alternating with, and equal in number to, the sepals, hypogynous, with a contorted æstivation, either distinct or adhering to the lower part of the tube of the stamens; *stamens* numerous, or as many as the petals, hypogynous, filaments monadelphous; *anthers* one-celled, reniform, bursting transversely; *ovary* of many carpels, verticillate round an axis, sometimes distinct; *styles* equal in number to the carpels; either united or distinct; *stigmas* as many as the carpels, more or less distinct; *fruit* capsular, or baccate, having one, two, or many-seeded carpels; *seeds* usually ovate, often hairy; *albumen* none; *embryo* straight, with cotyledons twisted like a chrysalis. *Herbs*, *shrubs*, or *trees*, with alternate divided stipulate *leaves*, and stellate hairs.

ALTHÆA. (De Cand. i 436.)

*ALTHÆA HIRSUTA. (Linn.) (E. B. 2674.)

Fl. pale rose-coloured. August, September. Perennial. Hedges.

Leaves emollient, cleansing to ulcers; seeds opening, diuretic.

*ALTHÆA OFFICINALIS. (Linn.) (E. B. 47.) *Malva Bismalva officinarum.* (Volck.) *Althæa*, *Bismalva*, *Ibiscus*, *Marsh mallow.*

Fl. pale rose-colour. August, September. Perennial. Hedges and pastures.

Roots, *althææ radix*, and leaves, *althææ folia*, very emollient, particularly useful in diseases of the bladder; flowers pectoral.

**ALTHÆA ROSEA. (Cav.) *Alcea rosea.* (Linn.) *Malva arborea, Hollyhock.*

Fl. various in colour. July, September. Biennial. From India.

Same qualities as Althæa officinalis.

GOSSYPIUM. (De Cand. i. 456.)

GOSSYPIUM BARBADENSE. (Linn.) West Indies.

Seeds pressed for oil.

GOSSYPIUM HERBACEUM. (Linn.) *Bombax, Cotton.* India, America.

Seeds pectoral, antiasthmatic; down of seeds used as a caustic instead of moxa; young buds very mucilaginous, pectoral.

HIBISCUS. (De Cand. i. 446.)

HIBISCUS ABELMOSCHUS. (Linn.) *Bamia moschata, H. moschatus, Musk ochra, Musk mallow.* East Indies, South America.

Seeds, *Musk seeds, Grains d'ambrette*, smell like musk; are cordial, cephalic, stomachic, and emetic; used in coffee and mixed with hair-powder.

HIBISCUS CANNABINUS. (Linn.)

Acidulous.

HIBISCUS ESCULENTIS. (Linn.) *Abelmoschus esculentus Okra.* West Indies.

Unripe pod used as a pot-herb; contains a kind of gelatine; used in hot countries as a means of thickening soup; decoction of leaves and pods demulcent, pectoral.

HIBISCUS ROSA SINENSIS. (Linn.)

Flowers astringent.

HIBISCUS SABDARIFFA. (Linn.) *Guinea sorrel, Red sorrel.*

Herb acid, refreshing, diuretic.

HIBISCUS SURRATTENSIS. (Linn.)

Acidulous.

LAVATERA. (De Cand. i. 438.)

*LAVATERA ARBOREA. (Linn.) (E. B. 1841.) *Malva arborea, Tree mallow.*

Fl. pink. July, August. Perennial.

LAVATERA THURINGIACA. (Linn). Germany.

LAVATERA TRILOBA. (Linn.) Spain.

Have the same qualities as Althæa officinalis.

MALVA. (De Cand. i. 430.)

MALVA ALCEA. (Linn.) *Alcea, Vervain mallow.* Europe and Asia.

MALVA CRISPA. (Linn.) *Curl-leaved mallow.* Europe and Asia.

*MALVA MOSCHATA. (Linn.) (E. B. 754.) *Musk mallow.*

*MALVA ROTUNDIFOLIA. (Linn.) (E. B. 1092.) *Dwarf mallow.*

*MALVA SYLVESTRIS. (Linn.) (E. B. 671.) *M. communis, Common mallow.*

The English species have purple or rose-coloured flowers. Flower from June to August, and are perennial.

All these herbs are eminently emollient and moistening; proper to cool and open the belly; flowers pectoral.

PAVONIA. (Lindl. Fl. Med. 142.)

PAVONIA DIURETICA. (Ang. de St. H.) Brazil.
Decoction used with success in cases of dysuria. (L.)

SPHÆRALCEA. (Lindl. 142.)

SPHÆRALCEA CISPLATINA. (Aug. de St. H.) Brazil.
Decoction used in Brazil in inflammations of the bowels, and generally as the marsh mallows of Europe.

SIDA. (De Cand. i. 459.)

SIDA ABUTILON. (Linn.) *Indian mallow.* East Indies.
Has the same qualities as Althæa officinalis.

SIDA CORDIFOLIA. (Linn.) East Indies and Africa.
Mixed with rice used in dysentery.

SIDA INDICA. (Linn.) East Indies.
Used in India as an emollient.

SIDA RHOMBOIDEA. (Roxb.) East Indies.
Emollient, used as marsh mallows.

URENA. (De Cand. i. 441.)

URENA LOBATA. (Linn.) East Indies.
Decoction used in Brazil as a remedy in windy colic; flowers in inveterate coughs as an expectorant.

ORDER 24.—BOMBACEÆ. (De Cand. i. 475.)

Calyx either naked, or surrounded with an involucre, consisting of five sepals, united at the base; *petals* five, or none; *stamens* definite, or indefinite, variously monadelphous; *anthers* one-celled; *carpels* of ovary five, rarely ten, sometimes distinct, sometimes closely cohering, bursting in various ways; *styles* either distinct, or more or less cohering; *fruit* various; *seeds* often woolly, or surrounded with a pulp, some without albumen, with corrugated or convoluted cotyledons, others albuminous, with flat cotyledons. *Trees*, or *shrubs*, with alternated bistipulated *leaves*; *pubescence* often stellate.

ADANSONIA. (De Cand. i. 478.)

ADANSONIA DIGITATA. (Linn.) *Baobab.* Africa.
Emollient; fruit acidulous, used in pulmonary affections, and instead of tamarinds. Has been recommended for intermittent fevers as a substitute for quinine.

BOMBAX. (De Cand. i. 478.)

BOMBAX CEIBA. British Guiana.
Yields a fibre called *Silk cotton*, which is said to be imported to the United States, and used in the manufacture of hats.

BOMBAX MALABARICUM. (Rheed.) *B. heptaphyllum.* (Cav.) India.
Yields a gum resin called *Moocherus*; roots constitute the *Sufed mooslie* of the Hindoos. Much used in India as a nutritious demulcent for convalescent persons. (O'Sh.)

CAROLINEA. (De Cand. i. 478.)

CAROLINEA PRINCEPS. (Linn.) *Pachera aquatica, Sergeant, Wild cacao.* Guiana.

Seeds esculent, similar to almonds.

ERIODENDRON. (De Cand. i. 479.)

ERIODENDRON ANFRACTUOSUM. *Bombax pentandrum,* (Linn.) *Cotton tree.* India.

Yields *Cotton-tree gum.* (G.) Gum given in solution with spices, in bowel complaints. (O'Sh.)

ORDER 25.—BYTTNERACEÆ. (De Cand. i. 481.)

Calyx either naked, or surrounded with an involucre; *sepals* five, more or less joined at the base, with a valvate æstivation; *petals* five, hypogynous, alternate with the sepals, convoluted in æstivation, varying in form, rarely unequal, or none; *stamens* either equal in number to the petals and sepals, or some multiple of them; *filaments* more or less monadelphous; *anthers* two-celled, turned outwards; *carpels* five, very rarely three, distinct, or cohering into one ovary; *styles* as many as the carpels, whether distinct, or cohering; *albumen* oily, or fleshy, rarely none; *embryo* straight, with an inferior radicle; *cotyledons* either foliaceous, flat, and plaited, or rolled round the plumule, sometimes very thick, but this only in the seeds without albumen. *Trees* and *shrubs*, with alternate simple *leaves; inflorescence* variable.

BYTTNERIA. (De Cand. i. 487.)

BYTTNERIA CORDATA. (Lamb.) Peru.

Leaves applied to bites of spiders.

GUAZUMA. (De Cand. i. 485.)

GUAZUMA TOMENTOSA. (Kunth.) *Bubroma guazuma, Bastard cedar.* South America.

Old bark employed as a sudorific; young bark mucilaginous; employed for cleansing sugar. (O'Sh.)

GUAZUMA ULMIFOLIA. (Lamb.) *Theobroma guazuma.* South America and West Indies.

Young bark used, on account of its mucilage, to clarify sugar.

HELICTERES. (Lindl. 138.)

HELICTERES SACAROLHA. (Aug. de St. H.) Brazil.

Decoction of roots administered in Brazil in venereal complaints.

KYDIA. (De Cand. i. 500.)

KYDIA CALYCINA. (Roxb.) East Indies.

Bark used in India to clarify sugar.

PENTAPETES. (De Cand. i. 498.)

PENTAPETES PHŒNICEA. (Linn.) *Muchucunda.* East Indies.

Flowers expressed yield a mucilaginous and refrigerant juice used in gonorrhœa.

SOUTHWELLIA. (Lindl. 136.)

SOUTHWELLIA TRAGACANTHA. (Schott.) *Sterculia tragacantha.* Sierra Leone.

Known at Sierra Leone as the *Tragacanth tree,* as it exudes a gum resembling Tragacanth when wounded.

STERCULIA. (De. Cand. 481.)

STERCULIA ACUMINATA. (Beauv.) *Kola.* Africa.

Fruit, *Kola nuts*, much esteemed in Africa, as brackish water tastes well after eating them.

STERCULIA BALANGHAS. (Linn.) *Cleompanos minor, Cavalam.* Malabar.

Pulp of fruit esculent; kernels toasted and eaten.

STERCULIA FŒTIDA. (Linn.) *Cleompanos major, S. digitifolia, Karil root.*

Leaves and fruit in decoction, useful in pains of the joints. (G.) Leaves considered aperient, and a decoction of the fruit mucilaginous and astringent. (O'Sh.)

STERCULIA PLATANIFOLIA. (Linn.)

Seeds pressed for their oil.

STERCULIA URENS. (Roxb.) *Cavallium urens.* Hindostan.

Yields a gum extremely like Tragacanth.

THEOBROMA. (De Cand. i. 484.)

THEOBROMA CACAO. (Linn.) *Cacao theobroma.* (Tuss.) *Cacao minus.* (Gärt.) South America.

Seeds, *Chocolate nut, Island cacao, Cacao des antilles, Cacao des isles, Cacao antillanum*, flattened, covered with a red paper-like envelope; kernel brown, fat, tastes agreeable, slightly acrid, yields oil; chocolate and cacao are made from it. *Caracca, Cacao Caraque, Cacao Carraccense*, seed larger, round, covering reddish-brown; kernel pale brown, friable, dry, and strong tasted, is often mouldy, as having been buried thirty or forty days, to get rid of some of its acridness.

WALTHERIA. (Lindl. 136.)

WALTHERIA DOURADINHA. (Aug. de St. Hil.) Brazil.

Used in complaints of the chest, and also in venereal complaints.

ORDER 26.—TILIACEÆ. (De Cand. i. 503.)

Calyx externally naked; *sepals* 4—5, with a valvular æstivation; *petals* equal in number to the sepals, alternating with them, frequently having a little pit at their base, entire, very seldom wanting; *stamens* hypogynous, distinct, generally indefinite in number; *anthers* two-celled, dehiscing longitudinally; *glands* as many as the petals, opposite to them, adhering to the stalk of the ovary; *ovary* single, formed of from four to ten carpels; *styles* as many as the carpels, united into one; *stigmas* as many as the carpels, free; *capsule* many-celled; *seeds* numerous in each cell; *embryo* erect; *cotyledons* flat, leafy. *Trees*, or *shrubs*, with simple bistipulate *leaves*.

ABATIA. (De Cand. i. 503.)

ABATIA PARVIFLORA. (Ruiz et Pav.) Peru.

ABATIA RUGOSA. (Ruiz et Pav.) Peru.

Leaves dye black.

CORCHORUS. (De Cand. i. 504.)

CORCHORUS CAPSULARIS. (Linn.) *Ghee, Naltha paut.*

CORCHORUS OLITORIUS. (Linn.) *Bunghee paut, Jew's mallow.*

Tropical parts, Asia, Africa, America.

Leaves emollient, eaten as spinach in hot countries. (G.) Infusion of the leaf much employed as a fever drink in India. (O'Sh.)

GREWIA. (De Cand. i. 508.)

GREWIA FLAVA (D. C.) *Brandewyn bosh.* Cape of Good Hope.
Berries make a spirituous liquor.

GREWIA ORIENTALIS. (Linn.) East Indies.
Fruit and leaves boiled in water make a kind of drink.

GREWIA MICROCOS. (Linn.) *Microcos paniculata, Schageri cottan.* East Indies.
Juice with sugar, used as an astringent gargle; also internally in dysentery.

TILIA. (De Cand. i. 512.)

TILIA INTERMEDIA. (Hayn.) (E. B. 610.) *T. Europea, Linden, Bast, Lime-tree.*
Fl. straw-coloured. July. Tree. Woods, &c.
Flowers antispasmodic, cephalic; bark and leaves drying, astringent, diuretic, emmenagogue; berries astringent, slime of the bark used in burns and wounds.

ORDER 27.—ELEOCARPEÆ. (De Cand. i. 519.)

Sepals 4—5, with a valvate æstivation, no involucre; *petals* 4—5, hypogynous, alternate with the sepals, lobed, or fimbriated at the apex; *torus* glandular, somewhat projecting; *stamens* hypogynous, or rarely perigynous, some multiple of the sepals (8—10); *filaments* short, distinct; *anthers* long, filiform, four-cornered, two-celled, the cells opening by an oblong pore at the apex; *ovary* many-celled; *style* one, very rarely four; *seeds* one, two, or more, in each cell; *albumen* fleshy; *embryo* erect, with flat foliaceous cotyledons. *Trees*, or *shrubs*, with alternate *leaves* and racemose *flowers*.

DICERA. (De Cand. i. 520.)

DICERA SERRATA. (Forst.) *Elæocarpus serratus, Ganitrum.*

ELÆOCARPUS. (De Cand. i. 519.)

ELÆOCARPUS HINAU. *Hinau.* Tropical Asia, New Zealand.
The bark of this tree is used in New Zealand for dyeing black, and affords a remarkably deep and brilliant dye.

ELÆOCARPUS INTEGRIFOLIUS. (Lamb.) East Indies, New Zealand.
ELÆOCARPUS OBLONGUS. (Smith.) *Ganitrum oblongum.*
Fruit eaten either raw, or preserved in sugar, or salt and vinegar; strengthening.

VALLEA. (De Cand. i. 520.)

VALLEA CORDIFOLIA. (Ruiz et Pav.) Peru.
Leaves dye cloth yellow.

ORDER 28.—DIPTERACEÆ. (Lindl. Nat. Order 74, p. 98.)

Calyx tubular, five-lobed, unequal, persistent, and afterwards enlarged, naked at base, æstivation imbricated; *petals* hypogynous, sessile, often combined at the base, æstivation contorted; *stamens* indefinite, hypogynous, distinct, or slightly and irregularly polyadelphous; *anthers* innate, subulate, opening longitudinally towards the apex;

filaments dilated at base; *ovary* superior without a disk, few-celled; *ovules* in pairs, pendulous; *style* single, stigma simple; *fruit* coriaceous, one-celled by abortion, three-valved, or indehiscent, surrounded by the calyx, having tough, leafy, enlarged permanent divisions, which crown the fruit; *seed* single, without albumen; *cotyledons* twisted and crumpled, or unequal, and obliquely incumbent; *radicle* superior. Elegant *trees*, abounding in resinous juice, with alternate *leaves*, and large *flowers*, in terminal racemes, or panicles.

DIPTEROCARPUS. (Endl. Gen. Pl. 1013.)

DIPTEROCARPUS TRINERVIS. (Blume.) Java.

Yields a resinous secretion called *Gurgun*, used by the natives as salve for inveterate ulcers, when it is desirable to excite the wound and correct the pus; dissolved in spirits of wine, it has the same effect as balsam of copaiba upon the mucous membranes, and hence has been recommended as a substitute for that article. (L.) This and other species, such as *Dipterocarpus larvis*, (Hamilt.,) and *D. turbinatus*, (Roxb.,) yield the substance called *Gurjun balsam*, or *Wood oil*. The balsam is obtained by cutting a large notch in the trunk of the tree near the ground, and then lighting a fire, which is allowed to char the wound, soon after which the liquid begins to ooze out. A tree yields about forty gallons in a season, according to Roxburgh. The balsam varies in thickness from that of honey to a light oily liquid. The colour is a pale grey or light brown. The smell resembles a mixture of copaiba with a little naphtha. The sp. gr. is ·962. It is insoluble in water, soluble in warm spirit sp. gr. ·835, and difficultly soluble in ether. On distillation with water, it yields about thirty-five or forty per cent. of volatile oil, and a thick resin remains. Numerous experiments have proved this balsam to be nearly equal in medicinal efficacy to the balsam of copaiba. It is given in the same doses. (O'Sh.)

DRYOBALANOPS. (Endl. Gen. Pl. 1013.)

DRYOBALANOPS AROMATICA. (Gärt.) *Dryobalanops camphora.* (Coleb.) *Pterygium teres.* (Corr.) *Shorea camphorifera.* (Roxb.) Java.

Borneo camphor, and *Camphor oil*, are found in cavities in the trunk of this tree. This kind of camphor is said to be very valuable, but on account of its high price is not brought to Europe, but is chiefly exported to China and Japan, where it is highly valued for its stimulant and tonic properties.

SHOREA. (Endl. Gen. Pl. 1014.)

SHOREA ROBUSTA. (Roxb.) East Indies.

Yields the resinous substance called *Dammer*, in India used for various economical purposes. (L.) Dammer unites with the oxide of lead and forms plasters. (O'Sh.)

VATERIA. (Endl. Gen. Pl. 1013.)

VATERIA INDICA. (Linn.) *Elæocarpus copalliferus.* (Retz.) *Pænoe.* (Rheed.) East Indies.

Exudes a resin like copal, which hardens of a deep amber colour; in its fluid state it is the *Pænoe* varnish of the south of India; it also yields *Moschat resin*, and *Pænoe tallow;* in its solid state it has been said to constitute the resin called *Anime* in India, but generally known

as *Copal* in this country. This resin, however, is more frequently ascribed to *Hymenæ verrucosa*. O'Shaughnessy states that candles are made of the resin of Vateria Indica in Malabar, which diffuse in burning an agreeable fragrance, give a fine clear light, with little smoke, and consume the wick without snuffing.

Order 29.—CAMELLIEÆ. (De Cand. i. 529.)

Sepals 5—7, imbricated in æstivation, the inner one generally larger, sub-concave, coriaceous, deciduous; *petals* as many as the sepals, alternate with them, often sub-coherent at the base; *stamens* numerous; the *filaments* filiform, monadelphous, or polyadelphous at the base; *anthers* ellipsoid or round, versatile; *ovary* one, ovato-rotund; *styles* 3—6, filiform, more or less coherent; *capsule* three-celled, three-valved, dehiscent; three-seeded by abortion; valves sometimes septiferous in the middle, sometimes having the margin inflexed; *seeds* few, large, thick, attached to the central margin of the septa; *albumen* none; *cotyledons* large, thick, oleaginous, plano-convex, and articulated at the base; *radicle* very short, obtuse, turned towards the hilum; *plumula* scarcely perceptible, ascending. Evergreen *shrubs*, or *trees*, with alternate coriaceous *leaves*, and large, white, pink, red, or yellow *flowers*.

Camellia. (De Cand. i. 529.)

**Camellia Japonica. (Linn.) (Bot. Mag. 42.) *Common camellia, Japanese camellia.*

Fl. pink, white, red, or variegated. February, May. Small tree. Japan.

Leaves frequently mixed with those of tea by the Chinese.

Camellia Sesanqua. (Thunb.) Japan.

Leaves used for those of tea; are odoriferous, and are also added to tea to scent it; seeds expressed for their oil.

Camellia drupifera. (Lour.) Cochin China.

Seeds expressed for their oil.

Thea. (De Cand. i. 530.)

Thea Chinensis. (Sims.)

Two varieties of this plant are cultivated in China, they are—

a Thea viridis. (Linn.) *Green tea.*

Doubtful whether a distinct species, or only the young leaves of the bohea, slowly dried in the shade: the infusion narcotic in a small dose, and appeases the qualms of intoxication, but taken largely brings on watchfulness, nervous agitation, and is even emetic: this irritability is best allayed by butter-milk. The green teas of Des Guignes are—

1. Songlo tea, (from the place where it is grown,) has a leaden cast, the infusion is green, the leaves are longer and more pointed than the black teas; the inferior sorts have yellow leaves and a smell of sprats.

2. Hyson tea, (*he tchune*, first crop,) is of a leaden cast, the infusion is a fine green, the leaves are handsome, without spots and open quite flat; it has a strong taste, and a slight smell of roasted chestnuts.

3. *Tcheu tcha*, of which he gives no characters.

Besides these, there are imported into England these green teas:

Hyson skin, or *bloom tea*, being the large loose leaves of the hyson: a faint delicate smell; infusion a pale green; the bloom is given by means of indigo heated under it.—*Superior hyson skin*, intermediate between hyson and hyson skin. *Gunpowder tea*, a superior hyson in small round grains, of a blooming, greenish hue. *Chelian*, or *cowslip hyson*, a scented hyson, mixed with small berries, that give it a cowslip flavour. The Ankoy teas, obtained from An Khe, have the same appearance as the Canton teas, but are inferior in flavour, and generally sell from 4*d*. to 1*s*. a lb, lower. They are supposed to be picked from wild tea plants. The leaves of tea having little or no smell, they are rendered fragrant by mixing with them the leaves of Olea fragrans, and Camellia sesanqua. The leaves of Polygala theezans, and of Ramnus theezans, are also mixed with China tea.

Mr. Warington has lately discovered that the bloom and much of the colour of green tea is produced by means of Prussian blue, instead of being caused by drying the leaves upon copper plates, as formerly supposed. Large quantities of Prussian blue were formerly sent from this country to China, but the demand has ceased for some years, owing possibly to the circumstance of the Chinese having discovered the method of making it themselves.

β. THEA BOHEA. (Linn.) *Black tea.*

Des Guignes gives the following characters of the different kinds of black tea, as he observed them in China, using the common English orthography, with their usual price at Canton; they are supposed to be picked from old trees, and are dried in shallow pans over charcoal fires.

1. BOHEA TEA, (*Vo he*, the name of a place,) is of a black cast, and yields a deep yellowish infusion; sells in China for 12 to 15 taels.

2. CONGOU TEA, (*cong fou*, great care,) the infusion is lighter than that of bohea, rather green, and seldom of an agreeable smell; preferred by the Chinese and Indian islanders for their own use.

3. SOUTCHONG TEA, (*se ow chong*, a very little sort,) the infusion is a fine green, smells agreeably; the leaves ought to have no spots on them.

4. PEKAO TEA, (*pe kow*, white leaf bud,) the infusion is light and rather green, has a violet scent, and a very fine perfume in the mouth.

5. IMPERIAL TEA, (*mao tcha*,) has a green cast, the infusion is also green; the leaves large and of a fine green: has a slight smell of soap. To these may be added, *Campoi tea*, which is intermediate between congou and soutchong.

6. PADRE TEA, (*pou chong tcha*) a very fine soutchong, imported in pound papers, for presents; being the best and most delicious. *Caper tea*, made into balls with gum, and scented, imported only in small boxes.

China tea is not turned black by being put into water impregnated with sulphuretted hydrogen gas, nor does it tinge spirit of hartshorn blue. The infusion is amber-coloured, and is not reddened by adding a few drops of oil or spirit of vitriol to it. The leaves of speedwell, wild germander, black currants, syringa or mock orange, purple-spiked willow-herb, sweetbriar, cherry-tree, sloe, are all substituted for tea,

either singly or mixed. In foreign countries a variety of plants are used instead of Chinese tea, as *Capraria bifolia*, *Alstonia theæformis*, *Gualtheria procumbens*, *Myrtus ugni*, *Leptospermum scoparium*, *Ceanothus Americanus*, *Prinos glaber*, *Ledum latifolium*, *Chenopodium ambrossoides*, *Monarda kalmiana*, *Psoralia glandulosa*, *Cassine peragua*. *Zenopoma thea Sinensis* is beginning to be cultivated in France as a substitute for Chinese tea. In Hindostan, those with whom the common tea does not agree, use an infusion of lemon grass, or of *Ocymum album*.

Order 30.—AURANTIACEÆ. (De Cand. 535.)

Calyx urceolate, or campanulate, subadnate to the disk, short, 3—5 toothed, withering; *petals* 3—5, broad at the base, free, or slightly united together, inserted on the outside of a hypogynous disk; *stamens* either equal in number to, or some multiple of, the petals, inserted on the sides of the hypogynous disk; *filaments* flattened at the base, free, or variously united, always free at the apex; *anthers* terminal, innate, erect; *ovary* ovate, many-celled; *style* one; *stigma* thick, subdivided; *fruit* pulpy, separated into many cells by the membraneous partitions; *seeds* attached to the inner angles of the carpels, numerous, or solitary, usually pendulous, exalbuminous; *embryos* sometimes many, straight; *raphe* and *chalaza* distinct. *Trees*, or *shrubs*, almost always smooth, and filled everywhere with little transparent receptacles of volatile oil, with alternate, often compound *leaves*, articulated on the stem.

Ægle. (De Cand. i. 538.)

Ægle marmelos. (Corr.) *Crataeva marmelos*, *Bilva* or *Mahura*. East Indies.

Fruit nutritious, warm, cathartic, delicious; its efficacy in removing habitual costiveness has been proved by constant experience; root, bark, and leaves, reckoned refrigerants by the Malabar physicians. (L.) The mucus of the seeds is for some purposes a very good cement. (O'Sh.)

Bergera. (De Cand. i. 537.)

Bergera Konigii. (Linn.) Coast of Coromandel.

Bark and root used as stimulants by the natives of India, and employed externally against the bites of poisonous animals; green leaves prescribed to be eaten raw in dysentery, also bruised and applied externally to cure eruptions. (L.) An infusion of the toasted leaves used by the Hindoos to stop vomiting. (O'Sh.)

Citrus. (De Cand. i. 539.)

**Citrus aurantium. (Risso.) *C. sinensis*, *China orange*, *Common orange*, *Sweet orange*.

Fl. white. June. Small tree. Cultivated in gardens and greenhouses.

Fruit sweet, imported from Faro, Lisbon, Port St. Michael's; price very variable; juice of the fruit contains a saccharine, as well as an acid matter; mixed with salt is a common purge in the West Indies; flowers, *naphæ*, sweet-scented, used to make orange flower-water, are collected every morning in May and June, for thirty miles round Paris, from both public and private gardens; buds, *Aurantiæ flores*, that fall from the trees, used to make orange-flower water; *Flores aurantium conditi*, *Candied orange flowers*, orange flowers freed from

their cups, stamina, and pistils; four ounces are put into ℔ij. of sugar, boiled to a candy height, and poured on a slab, so as to be formed into a cake; stomachic, antispasmodic; *Malta orange*, pulp red, juice very sweet; *Chota chia*, *East Indian small clove orange*, rind used to make the best orange marmalade; *East Indian country orange*, *Koula*, pulp austere and coarse; rind added in small quantity to orange marmalade to give it an agreeable flavour. (G.) The leaves of the orange tree have been used in the form of powder, or infusion, in spasmodic diseases; the young unripe fruit, dried and turned in a lathe, are the *issue peas* of the shops; the rind is a mild tonic and aromatic, a large quantity said to be sometimes productive of mischief; juice refreshing in fevers; orange flowers yield the officinal *oleum aurantii*, or *oil of neroli*. (L.)

CITRUS DECUMANA. (Linn.) *Pampelmus*, *Shaddock*, West Indies. Fruit, very large, esculent.

CITRUS LIMETTA. (Risso.) *C. l. bergamium*, *C. bergamia*, *C. medica bergamotta*, *Limon bergamotta*, *Bergamot lemon tree.* Cultivated in the South of Europe.

Rinds of the fruit very thick, yield the essence or oil of bergamotte of the shops, used in medicine on account of its odour. (G.) Employed as a perfume only.

**CITRUS LIMONUM. (Risso.) *Citrus medica acida*, *Lemon tree.* Fl. white, externally purplish. June. Small tree; greenhouses.

Pulp juicy, very acid; juice of the fruit yields citric acid; when properly diluted, and slightly sweetened, it is a most agreeable and refreshing beverage; the essential oil of the rind recommended by Mr. Foote as a stimulant in various inflammations of the eye; *peel* aromatic and stomachic, but does not agree with all stomachs. (L.) The fruit, *Limonia malus*, imported from Malaga and Lisbon, in chests, each lemon in a separate paper; juice of the fruit more acid than that of the citron; rind of the fruit, *Limonum cortex*, aromatic, not so hot as orange peel, yields essence of lemons; *Candied lemon peel*, *cortex limonum condita*, prepared as candied citron peel, a stomachic sweetmeat. (G.)

CITRUS MEDICA. (Risso.) *Citron.*

Fl. white, externally purplish. June. Small tree. Native of Asia.

Fruit, *Citria malus*, *citrus*, excites the appetite, stops vomiting, is acidulous, antiseptic, antiscorbutic, and used along with cordials as an antidote to the manchineel poison; rind of the fruit, *Citri cortex*, aromatic, tonic, yields *essence de cedrat;* seeds bitter, vermifuge. *Candied citron peel*, *cortex citri condita;* soak the peels in water frequently changed, until their bitterness is exhausted, put them into syrup until they become soft and transparent, then take them out and drain them; stomachic used as a sweetmeat.

Lime tree. *Citrus medica acida*, *C. acida*, *C. limetta.* Fruit, *Lime*, *Limetta*, used to rub floors to cleanse them, and also to scent the rooms. Juice of the fruit very acid, and even acrid; used to acidulate spirituous drinks.

**CITRUS VULGARIS. (Risso.) *C. aurantium*, *C. bigaradia*, *Aurantium amarum*, *The Seville orange.*

Fl. white. June. Small tree. South Europe, Asia.

Leaves and flowers antispasmodic, cordial 3ss. to 3j., *bis terve in die*, or in a decoction; fruit, *Seville orange*, *Aurantia malus*, *Aurantiæ baccæ*, imported from Seville. (G.) Rind of the fruit, *Aurantii cortex*, more bitter and tonic than that of the last species, and therefore more employed medicinally. (L.) Unripe fruit, *Orange peas*, *Curasso oranges*, *Baccæ aurantiæ*, *Aurantia curassoventia*, used to flavour liqueurs, and for issue peas; *Candied orange peel*, *Cortex aurantiarum condita*, made the same way as candied citron peel; stomachic. (G.)

FERONIA. (De Cand. i. 538.)

FERONIA ELEPHANTUM. (Corr.) *Capittha*, *Elephant, or wood apple.* East Indies.

Both leaves and flowers exhale a powerful odour of anise. (L.) Young leaves employed by the native practitioners as a gentle stomachic stimulant in the bowel complaints of children; yields a gum much resembling gum arabic in its chemical and sensible properties. (O'Sh.)

ORDER 31.—HYPERICINEÆ. (De Cand. i. 541.)

Sepals 4—5, either more or less cohering, or wholly distinct, persistent, with glandular dots, often unequal, *i. e.* the two outer ones smaller, the three inner larger: *petals* 4—5, hypogynous, alternating with the lobes of the calyx, contorted in æstivation; *stamens* indefinite, hypogynous, in three or more parcels; *anthers* versatile; *filaments* long; *ovary* one, superior, free; *styles* numerous, long, sometimes united into one; *stigmas* simple, rarely capitate; *fruit* a capsule or berry of many valves, and many cells; cells as many as the styles; *placenta* entire and central, or multipartite, and affixed to the incurved margin of the valves; *seeds* very numerous, generally round; *embryo* straight; *radicle* inferior; *albumen* none. Herbaceous *plants* or *shrubs*, with a resinous juice, and opposite, entire, sometimes dotted *leaves*, occasionally alternate and crenelled, with generally yellow *flowers*.

ANDROSÆMUM. (De Cand. i. 543.)

*ANDROSÆMUM OFFICINALE. (All.) (E. B. 1225.) *Clymenum Italorum*, *Hypericum androsæmum*, *Park leaves*, *Tutsan.*

Fl. yellow. July. Hedges on gravelly soil.

Resolvent, attenuant. (G.) Leaves once much esteemed as vulnerary, still employed in cures of recent wounds by rustic nurses. (L.)

HYPERICUM. (De Cand. i. 543.)

HYPERICUM ASCYRON. (Linn.) *Ascyron*, *St. Peter's wort.* Siberia.

Seeds purgative, useful in sciatica.

HYPERICUM CORIS. (Linn.) *Coris*, *Bastard St. John's wort.* South of Europe.

Seeds diuretic, antispasmodic.

HYPERICUM PERFORATUM. (Linn.) (E. B. 295.) *Hypericum*, *Common St. John's wort.*

Fl. yellow, with a few black dots at the tips. July. Perennial. Hedges.

Resolvent, attenuant, nervine, employed in maniacal cases; contains resin; leaves astringent, give a good red dye to wool and oil; an infusion has been used in gargles and lotions.

Vismia. (De Cand. i. 542.

Vismia Guianensis. (Pers.) *Hypericum guianense.* Guiana.

Bark, when wounded, yields a gum resin, which, when dry, resembles gamboge; leaves and fruit also yield a similar secretion; it is purgative in doses of 7—8 grs.; a decoction of the leaves taken internally is valued as a cure for intermittent fevers. (L.) Several other species of *Vismia*, as *V. guttifera*, *V. sessilifolia*, &c., yield a similar secretion, known in Europe under the name of American or Mexican gamboge.

Order 32.—GUTTIFERÆ. (De Cand. i. 557.)

Flowers hermaphrodite or unisexual; *sepals* 2—6, usually persistent, round, membraneous, frequently unequal and coloured; *petals* hypogynous, from four to ten; *stamens* numerous, hypogynous, rarely definite; *filaments* of various lengths: *anthers* adnate, bursting inwards; *ovary* solitary, free; *style* very short, or none; *stigma* peltate, or radiate; *fruit* a berry, or drupe, or capsular, and opening by many valves, one or many seeded; *seeds* with a thin membraneous coat; *albumen* none; *embryo* straight; *cotyledons* thick. *Trees* or *shrubs*, yielding resinous juice, with exstipulate, generally opposite, coriaceous, entire *leaves*, and numerous axillary or terminal *flowers*.

Calophyllum. (De Cand. i. 562.)

Calophyllum calaba. (Jacq.) *Santa Maria tree.* Travancore.

Yields *Oleum Sanctæ Mariæ.* (G.) Produces the true East Indian *Tacamahaca*, or *Calaba balsam.* (L.)

Calophyllum inophyllum. (Lamb.) *C. tacamahaca.* (Willd.) *Alexandrian laurel*, *Poonamarum*, *Poon-wood tree.* India.

Yields *Mauritius tacamahaca.* (G.) Seeds yield an oil; resin of roots, supposed by some authors to be the same as the *Tacamahaca* of the Isle of Bourbon. (L.)

Calysaccion.

Calysaccion longifolium. (Wight.) *Soorger.* Malabar Ghauts.

The dried flower-buds, called *Nag-kassar*, have a fragrant smell, and are said to be used for stuffing pillows.

Canella. (De Cand. i. 563.)

Canella alba. (Murr.) *Winterania canella.* (Linn.) *Wild cinnamon.* West Indies, America.

Berry aromatic, used as a spice; bark, *White cinnamon*, *Canellæ cortex*, rolled, peeled, whitish, thicker than cinnamon, pungent, and sweet smelling; warm, stimulant, antiscorbutic, dose gr. x. to 3ss., used also as a stimulatory: *Alouchi* is said to be the produce of this tree. (G.) Bark yields by distillation a warm aromatic oil, reckoned carminative and stomachic; it is often mixed with oil of cloves in the West Indies; in this country it is principally employed as an aromatic addition, either to tonics or purgatives, in debilitated conditions of the digestive organs. *Canella bark* has also been employed in scurvy. (Pereira.)

Clusia. (De Cand. i. 558.)

Clusia alba. (Linn.)

Clusia rosea. (Linn.) America.

Juice used as pitch.

GARCINIA. (De Cand. 560.)

GARCINIA CAMBOGIA. (Desrous.) *Cambogia gutta.* (Linn.) *Mangostana Cambogia.* (Gärt.) *Carcapuli Acoste.* (Pluk.) *Coddam-pulli.* (Rheed.) *Camboge tree.* India.

Produces *gamboge.* (G.)

GARCINIA MORELLA. (Desrous.) *Hebradendron cambogioides.* (L.) *Gokatu, or Kana goraka.* Ceylon.

This plant has been proved to yield a kind of gamboge, not distinguishable chemically or medicinally from that of Siam: it is, however, doubtful whether the plant producing that is the same as this; it has also been proved by Drs. Graham and Christison, that the gambogioid exudation from *Stalagmitis cambogioides*, *Garcinia Cambogia*, and *Xanthochymus pictorius* differ from the real drug in texture, effects, colour, and chemical composition. (L.)

GARCINIA PICTORIA. (Roxb.) *Hebradendron pictorium.* (L.) India.

Roxburgh says, he uniformly found the gamboge from this tree, even in its crude unrefined state, superior in colour, while recent, to any other kind he had tried, but not so permanent as that from China. (L.) Several other species of *Garcinia* produce gamboge. (O'Sh.)

GARCINIA PURPUREA. (Roxb.) India.

The Indian name of the Mangosteen is *Kōkŭm.* The Portuguese term it *Brindao.* The fruit, which is of the size of a crab apple, is of a purple colour throughout, when ripe, and is eaten by the natives. Workers in iron use the acid juice as a mordant. From the seeds of this plant the article known as *Kokum butter*, *Cocum oil*, or *Concrete oil of Mangosteen* is obtained. It is used in various parts of the peninsula, to adulterate ghee or butter, and to be exported to England for mixing with bears' grease, in the manufacture of pomatum. It is a white or pale greenish-yellow, solid oil, brittle, or rather friable, having a faint but not unpleasant smell, melting at about 98°, and when cooled after fusion remaining liquid to 75°, and when it then begins to solidify, the temperature rises to 92°, at which it becomes solid. It is imported from Bombay.

STALAGMITIS. (De Cand. i. 562.)

STALAGMITIS CAMBOGIOIDES. (Murr.) Ceylon.

Produces a kind of gamboge.

STALAGMITIS OVALIFOLIA. (L.) *Xanthochymus ovalifolius.* South of India, Ceylon.

Dr. Wright considers this as yielding one kind of true gamboge.

The properties of gamboge are acrid and cathartic.

MAMMEA. (De Cand. i. 561.)

MAMMEA AMERICANA. (Linn.) *Abricot sauvage.* West Indies.

Fruit eaten, skin and seeds very bitter and resinous; bark abounds in a strong resinous gum, used by the negroes for extracting chigoes from their feet; melted down with a little lime juice, and dropped into sores, it is effectual in destroying maggots at the first dressing; a bath of the bark hardens the soles of the feet, like Mangrove bark. (L.)

Order 33.—HIPPOCRATEACEÆ. (De Cand. i. 567.)

Sepals five, rarely 4—6, very small, combined as far as the middle, persistent; *petals* five, rarely 4—6, equal, hypogynous, somewhat imbricated in æstivation; *stamens* three, very seldom 4—5; *filaments* cohering almost to the apex into a tube, dilated at the base, forming round the ovary a disk-like cup; *anthers* one-celled, dehiscing transversely at the apex, two, or even four celled; *ovary* concealed by the tube, three-cornered, free; *style* one; *stigmas* 1—3; *fruit* either composed of three samaroid carpels, or berried, with from one to three cells; *seeds* four in each cell, attached to the axis in pairs, some occasionally abortive, erect, exalbuminous; *embryo* straight; *radicle* tending towards the base; *cotyledons* flat, elliptical, oblong, somewhat fleshy, cohering when dried. Arborescent, or climbing shrubs, with opposite, simple, entire or toothed *leaves* and a racemose inflorescence.

Hippocratea. (De Cand. i. 567.)

Hippocratea comosa. (Swartz.) *H. multiflora.* Hispaniola.
Nuts, white, sweetish.

Order 34.—ERYTHROXYLEÆ. (De Cand. i. 573.)

Sepals five, combined at the base, persistent; *petals* five, hypogynous; *stamens* ten, monadelphous; *anthers* innate, erect, two-celled, dehiscing lengthwise; *ovary* three-celled, with two cells spurious; *styles* three, distinct; *stigmas* three, capitate; *ovule* solitary, pendulous, anatropal; *fruit* drupaceous, one-seeded; *seed* angular; *albumen* horny; *embryo* straight, central; *cotyledons* plano-convex; *radicle* superior; *plumule* inconspicuous; *shrubs* or *trees*; *leaves* alternate, usually smooth; *flowers* small, whitish or greenish.

Erythroxylum. (De Cand. i. 573.)

Erythroxylum Coca. (Lamb.) Andes of Peru.

The leaves constitute the celebrated *Coca* or *Ypada* of the Brazilians, by whom they are chewed in the same way as tobacco. A small pinch is wetted with saliva, and made into a ball with unslaked lime. It is a powerful stimulant, acting on the nervous system in the same way as opium, but less powerful and more permanent in its effects.

Order 35.—MALPIGHIACEÆ. (De Cand. i. 577.)

Calyx five, often persistent; *petals* five, unguiculate, inserted in a hypogynous disk, sometimes rather unequal, rarely wanting; *stamens* ten, alternating with the petals, very seldom fewer, sometimes solitary; *filaments* either distinct, or cohering for a short space at the base; *anthers* roundish; ovary one, usually three-lobed, formed of three carpels more or less combined; *styles* three, distinct, or combined; *ovules* suspended; *fruit* dry or berried, three-celled or three-lobed, occasionally by absorption 1—2 celled; *seeds* solitary, pendulous, exalbuminous; *embryo* more or less curved or straight; *radicle* short; *lobes* leafy or thickish. Small trees or shrubs sometimes climbing, with opposite, rarely alternate *leaves*, generally with stipules and a racemose or corymbose inflorescence.

Byrsonima. (De Cand. i. 579).

Byrsonima crassifolia. (D. C.) *Malpighia crassifolia.* (Linn.) *M. moureila.* Guiana.

Bark employed as a febrifuge; under the name of *Chapara mantica*, it is used in infusion as an antidote to the bite of the rattlesnake; it is also said to be employed successfully as a remedy for abscesses in the lungs. (L.)

Alcornoca bark has been said to be the produce of *Byrsonima laurifolia*, *rhopalæfolia*, and *coccolobæfolia*. (Lind. Veg. K. 390.)

MALPIGHIA. (De Cand. i. 577.)

MALPIGHIA GLABRA. (Linn.) *Cerasus Jamaicensis*, *Barbadoes cherry*. Warm parts of America.

Fruit subacid, carminative, stomachic.

TRIOPTERIS. (De Cand. i. 586.)

TRIOPTERIS JAMAICENSIS. (Linn.) *Switch sorrel*. Jamaica.

Acerb, bitterish.

ORDER 36. ACERINEÆ. (De Cand. i. 593.)

Calyx 4—5—9 partite; *petals* 4—9, inserted around the hypogynous disk, alternate with, and generally of the same colour as, the calyx, lobes rarely wanting; *stamens* inserted into the hypogynous disk, generally eight, rarely 5—12; *anthers* oblong; *ovary* didymous; *style* one; *stigmas* two; *fruit* consisting of two indehiscent carpels, which separate when ripe, forming a samara, *i. e.* a one-celled 1—2 seeded carpel, compressed at the upper part, and terminating in a diverging membraneous wing, thickened at the lower part; *seeds* oblong, attached to the base of the cell; *endopleura* subcarnose; *albumen* none; *embryo* curved or convolute; *cotyledons* foliaceous; *radicle* directed towards the base of the cell. *Trees* with opposite simple *leaves*.

ACER. (De Cand. i. 593.)

*ACER CAMPESTRE. (Linn.) (E. B. 304.) *Acer minus*, *Common maple*.

Fl. pale green. June. Large tree. Hedges, &c.

Root used in liver complaints.

ACER PLATANOIDES. (Linn.) *Norway maple*. Europe.

*ACER PSEUDO-PLATANUS. (Linn.) (E. B. 303.) *Acer majus*, *Greater maple*, *Sycamore*.

Fl. yellowish green. June. Large tree. Hedges, &c.

ACER SACCHARINUM. (Linn.) *Sugar maple*. Canada.

The sap of these trees, as well as that of the common maple, is used for making sugar and wine.

ACER RUBRUM. (Linn.) *Virginia maple*. North America.

Decoction of the inner bark used as an astringent eye-water.

ORDER 37.—HIPPOCASTANEÆ. (De Cand. i. 597.)

Calyx campanulate, five-lobed; *petals* five, or four by abortion, hypogynous, unequal; *stamens* 7—8, inserted on a hypogynous disk, unequal, free; *ovary* roundish, three-cornered; *style* one, filiform, conical; *fruit* coriaceous, 2—3 valved, 2—3 celled; *seeds* large, roundish, with a smooth shining coat, and a broad ash-coloured hilum; *albumen* none; *embryo* curved, inverted, with thick fleshy cotyledons and a very large plumula. *Trees* or *shrubs* with compound, opposite, exstipulate *leaves*; *flowers* in terminal racemes.

ÆSCULUS. (De Cand. i. 597.)

**ÆSCULUS HIPPOCASTANUM. (Linn.) *Horse chestnut*.

Fl. white, spotted with red and yellow. May. Large tree. India.

Bark recommended as a valuable febrifuge in intermittent and other

fevers (as well as the skin of the fruit), astringent, used for Peruvian bark in doses of 3ss. to 3j.; it deserves to be the subject of a series of well-conducted experiments; a decoction has been recommended in gangrene, and its powder is errhine; seeds farinaceous, but must be soaked in an alkaline ley to take off their bitterness.

PAVIA. (De Cand. i. 598.)

PAVIA RUBRA. (Lamb.) *Æsculus pavia*, *Scarlet-flowered horse chestnut.*

Bark febrifuge: root used for soap: seeds, *buck eyes*, used to poison fish.

ORDER 38.—RHIZOBOLEÆ. (De Cand. i. 599.)

Sepals five, more or less combined, imbricated in æstivation; *petals* five, thickish, unequal, arising along with the stamens from a hypogynous disk; *stamens* extremely numerous, slightly monadelphous, arising in a double row from a disk, the innermost being shorter and often abortive; *anthers* roundish; *ovary* superior, 4—6 celled, 4—6 seeded; *styles* 4—6; *stigma* simple; *ovules* peltate; *fruit* consisting of 4—6 nuts combined together, part of which are sometimes abortive, each nut indehiscent, one-seeded, one-celled, with a thick double putamen; *seed* reniform, exalbuminous, with a funicle which is dilated into a spongy excrescence; *radicle* very large, constituting nearly the whole of the almond-like substance of the nut, with a long two-edged caulicle, having two small cotyledons, and lying in a furrow of the radicle. *Trees* with opposite-stalked compound exstipulate *leaves* and racemose *flowers*.

CARYOCAR. (De Cand. i. 599.)

CARYOCAR BUTYROSUM. (Willd.) *Pekea butyracea*, *Rhizobolus butyrosus*, *Surawah*, *Suwarrow*, or *Souari nut.* Guiana.

Seed esculent. The kernel of the nut is considered one of the most delicious of the nut kind. The wood is excellent for ship timber, mill work, &c. (Schomburgk.)

CARYOCAR TOMENTOSUM. (Willd.) *Pekea tuberculosa*, *Rhizobolus pekea*, *R. tuberculosa*, *Guiana almonds*, *Brazil nuts.* Guiana, &c.

Seeds esculent, imported from the Brazils.

ORDER 39.—SAPINDACEÆ. (De Cand. i. 601.)

Flowers polygamous. *Males: calyx* more or less deeply 4—5 parted, or 4—5 leaved, with an imbricated æstivation; *petals* 4—5, or occasionally absent, alternate with the sepals, hypogynous, sometimes naked, sometimes with a double appendage on the inside, æstivation imbricated; *disk* fleshy, sometimes occupying the base of the calyx, regular, nearly entire, expanded between the petals and stamens, sometimes glandular, incomplete, the glands stationed between the petals and the stamens; *stamens* 8—10, rarely 5—6—7, very seldom 20, sometimes inserted into the disk, sometimes into the receptacle between the glands and the pistil; *filaments* free, or combined just at the base; *anthers* turned inwards, dehiscing longitudinally; rudiment of a *pistil* very small or none. *Hermaphrodite flowers: calyx*, *petals*, *disk*, *stamens*, as in the males; *ovary* three-celled, rarely 2—4 celled, the cells containing 1—2—3, very seldom more ovules; *style* undivided, or more or less deeply two or three cleft; *ovules*, when solitary, erect or ascending, rarely suspended; when double, the upper ascending, the lower suspended; *fruit* sometimes capsular, 2—3 valved, sometimes samaroid, sometimes fleshy and indehiscent; *seeds* usually with an aril, the outer integument crustaceous or membraneous, the interior pellucid; *albumen* none; *embryo* seldom straight, usually curved or spirally twisted; *radicle* next the hilum; *cotyledons*

incumbent, sometimes combined into a thick mass; *plumule* two-leaved. *Trees* or *shrubs* which often climb, and have tendrils, seldom climbing *herbs: leaves* alternate, compound, very rarely simple, with or without stipules, often marked with lines or pellucid dots; *flowers* in racemes, or racemose panicles, small, white or pink, seldom yellow.

CARDIOSPERMUM. (De Cand. i. 601.)

CARDIOSPERMUM HALICACABUM. (Linn.) East Indies.

Root aperient; juice used as an emollient in gonorrhœa; herb used as food.

EUPHORIA. (De Cand. i. 611.)

EUPHORIA LITCHI. (Desf.) *E. punicea.* (Lamb.) *Dimocarpus Lychi.* (Lour.) *Lit-chi Chinensis.* (Sonn.) *Scytalia Chinensis.* (Gaertn.) *Nephelium.* (Linn.) *Sapindus edulis, Lit-schi.* India and China.

Fruit esculent.

MAGONIA. (L.)

MAGONIA PUBESCENS. (Aug. de St. H.) *Phæocarpus campestris.* (Mart.) Brazil.

Ashes extremely alkaline; bark used for subduing the swellings produced in the hides of horses by the stings of insects; leaves lethal to fish. (L.)

MELICOCCA. (De Cand. i. 614.)

MELICOCCA BIJUGA. (Linn.) *Genip tree.* West Indies.

Seeds oily, esculent.

MELICOCCA TRIJUGA. (Juss.) *Schleichera trijuga.* (Willd.) India.

Bark astringent; rubbed up with oil, the natives of India use it to cure the itch. The pulpy subacid aril is edible and palatable. (L.)

PAULLINIA. (De Cand. i. 604.)

PAULLINIA AUSTRALIS. (L.) Brazil.

Supposed to be the plant from which a species of *Polistes* prepares a venomous honey in the woods of Brazil, (Auguste de St. Hilaire.) (L.)

PAULLINIA SORBILIS. (Mart.) South America.

The Indians of Para are said to prepare the substance called *Guarana* from the seeds of this plant.

PAULLINIA SUBROTUNDA. (Pers.) Woods in Peru.

Arillus esculent.

SAPINDUS. (De Cand. i. 607.)

SAPINDUS EMARGINATUS. (Vahl.) India.

Employed by the Hindoo physicians as an expectorant. (Ainslie.) When mixed with water froths like soap, and is used instead of that substance for many important purposes; Dr. Sherwood states that the seeds pounded with water often put an end to the epileptic paroxysm, a small quantity being introduced into the patient's mouth. (O'Sh.)

SAPINDUS SAPONARIA. (Linn.) *Saponaria, Soap-berry tree.* West Indies.

Fruit used with rum as an embrocation in rheumatism; tops, leaves, and seed vessels, form a lather with water, and cleanse linen, &c.; the plant intoxicates and kills fish. (G.) Fruit detersive and very acrid, they lather freely in water, and are used in the West Indies instead of

soap; "a few of them will cleanse more linen than sixty times their weight of soap;" pounded and thrown into water they intoxicate fish; a tincture of the berries has been recommended in chlorosis; *S. inæqualis* is said to have similar detersive qualities. (L.)

SCHMIDELIA. (De Cand. i. 610.)

SCHMIDELIA SERRATA. (D. C.) *Ornitrophe serrata.* Bengal.

Root astringent, employed by the Telinga physicians in substance to stop diarrhœa; ripe berries eaten by the natives of Coromandel. (L.)

SERJANIA. (De Cand. i. 602.)

SERJANIA TRITERNATA. (Willd.) *Liane a persil.* Warm parts of America.

Used to poison fish.

ORDER 40.—MELIACEÆ. (De Cand. i. 619.)

Sepals 4—5, more or less united; *petals* as many as the sepals, alternating with them, hypogynous, usually conniving at the base or even cohering; *stamens* twice as many as the petals; *filaments* cohering in a long tube; *ovary* solitary; *style* one; *stigmas* distinct or combined; *fruit* berried, drupaceous, or capsular, many-celled, often by abortion one-celled; *seeds* albuminous, or sometimes without albumen. *Trees* or *shrubs* with alternate exstipulate *leaves*.

CARAPA. (De Cand. i. 626.)

CARAPA GUIANENSIS. (Aubl.) *Persoonia guareoides.* (Willd.)

The bark has a high reputation as a febrifuge; the oil, *Oil of Carapa*, which is obtained from the fruit, is applied to the skin, also to the hair to promote its growth, and is administered internally as an anthelmintic. It is said to be excellent for preventing iron from rusting.

CARAPA OBOVATA. (L.) *Xylocarpus obovatus.*

CARAPA MOLUCCENSIS. (Lamb.) *Carapa Indica.* (Juss.) *Xylocarpus granatum.* (Kæn.) Various parts of the East Indies.

Contain an extremely bitter principle. (L.)

CARAPA TOULOUCOUNA. *C. Guineensis.* Africa.

A concrete fixed oil is obtained from the fruit, called *Tallicoonah* or *Kundah oil.* It has a bitter, acrid, and disagreeable taste, and is used by the natives as an anthelmintic and purgative. It is also used for burning in lamps, and as an application to the skin.

CHLOROXYLON. (De Cand. i. 625.)

CHLOROXYLON SWIETENIA. (D. C.) *Swietenia chloroxylon.* (Roxb.) East Indies.

The wood of this tree is the *Satin-wood* of the cabinet-makers. It is said to be one of the trees yielding the *wood-oil* of India. (L.)

CEDRELA. (De Cand. i. 624.)

CEDRELA ODORATA. (Linn.) *C. rosmarinus? Barbadoes cedar.*

Wood slightly odoriferous, antirheumatic; yields a resin. (L.)

CEDRELA TOONA. (Roxb.) *C. febrifuga. Poma. Toona.* Bengal, Java.

Bark used as a febrifuge. (G.) It has been employed in Java with much success in the worst epidemic fevers, diarrhœa, and other

complaints; and also in various cases of dysentery, but in the last stage only, when the inflammatory symptoms had disappeared; it has also been considered especially useful in bilious fevers and inveterate diarrhœa arising from atony of the muscular fibre. (L.)

GUAREA. (De Cand. i. 623.)

GUAREA AUBLETII. (A. de J.) *Trichilia guarea.* (Aublet.)
Bark a violent emetic and purgative; a decoction is said to produce similar effects, but in a milder manner; possibly the same as the next species. (L.)

GUAREA TRICHILIOIDES. (Cav.) *Melia guara.* (Jacq.) Cuba.
Juice of bark purgative and violently emetic. (L.)

HUMIRIA. (De Cand. i. 619.)

HUMIRIA BALSAMIFERA. (Aubl.) *Myrodendron amplexicaule, Houmiri*, or *Touri.* Guiana.
Yields *balsam houmiri;* bark resinous. (G.) The balsam is very similar to that produced by

HUMIRIA FLORIBUNDUM. (Mart.) Brazil.
This plant, the *Umiri* of the people of Para, yields from its trunk, when wounded, a valuable, fragrant, limpid, pale-yellow balsam, called *Balsam of umiri*, possessing the same medicinal qualities as balsam of copaiva; compared by Martius to that of Peru. (L.)

MELIA. (De Cand. i. 621.)

MELIA AZEDARACH. (Linn.) *Azedarach, Bread-tree.* Syria and South of Europe.
Seeds yield oil; bark, *azedarachta P. U. S.*, used for the Peruvian; leaves vulnerary, vermifuge, diuretic; root bitter and nauseous, used in North America as an anthelmintic; the pulp that surrounds the seeds said to be poisonous, but this is denied by Turpin; trees yield gum, and also toddy.

SANDORICUM. (De Cand. i. 621.)

SANDORICUM INDICUM. (Cav.) East Indies.
Root aromatic, stomachic, and antispasmodic; it is employed in Java against leucorrhœa, combined with the bark of the root of *Carapa obovata;* it is extremely bitter. (L.)

SWIETENIA. (De Cand. i. 625.)

SWIETENIA FEBRIFUGA. (Roxb.) *Soymida febrifuga.* (L.) *Red wood tree.* India.
Bark an efficient remedy for the dangerous jungle fever of India when cinchona produces no effect: it has also been employed successfully in India in bad cases of gangrene, and in Great Britain in typhus fever, and as an astringent. (L.) Dose in powder 3ss. (G.)

SWIETENIA CHICKRASSA. (Roxb.) *Chickrassia tubularis.* (L.) East of Bengal.
Bark powerfully astringent, without bitterness. (L.)

SWIETENIA MAHOGONI. (Linn.) *Cedrus mahogoni.* (Mill.) *Mahogany tree.* Hotter parts of America.

Wood astringent; an extract is made from it. (G.) Has been used in the West Indies as a substitute for Peruvian bark, but inferior to it. (L.) This is the *Mahogany wood* used for furniture, &c.

SWIETENIA SENEGALENSIS. (Desrous.) *Khaya Senegalensis.* (L.) Borders of the Gambia.

Bark very bitter, called *Cail cedra*, febrifuge; the blacks use it in infusion and decoction, never in powder; it is employed as a remedy for the fevers so common in the damp districts of the Gambia.

The *Juribali*, or *Euribali*, is a plant possibly allied to this genus; the bark is a potent bitter and astringent; it appears to be far superior to Peruvian bark in fevers of a typhoid or malignant nature; it is cordial and purgative, and is also a powerful diaphoretic, especially if taken warm. (Dr. Hancock.) It is not known to what genus this belongs. (L.)

TRICHILIA. (De Cand. i. 622.)

TRICHILIA EMETICA. (Vahl.) Yemen, Senegal.

Fruit used by the Arabs as an emetic under the name of *Djouz elkai;* ripe seeds formed with sesamum oil into a salve against the itch. (L.)

TRICHILIA SPONDIOIDES. (Swartz.) *Bastard Brazil.* Jamaica and Hispaniola.

Wood used in dyeing.

TRICHILIA SPINOSA. (Willd.) East Indies.

Berries boiled for their oil.

TRICHILIA TRIFOLIATA. (Linn.) Curaçoa.

The female slaves in Curaçoa use a decoction of the roots to produce abortion; the Dutch call the tree *Kerseboom*, the Spaniards *Ceraso macho.* (L.)

WALSURA. (O'Sh.)

WALSURA PISCIDIA. East Indies.

Bark employed to intoxicate fish, which are not deemed unwholesome in consequence. (O'Sh.)

ORDER 41.—AMPELIDEÆ. (De Cand. i. 627.)

Calyx small, entire or toothed at the margin; *petals* 4—5, alternate with the teeth of the calyx, inserted on a disk which surrounds the ovary; *stamens* as many as the petals, inserted upon the disk; *anthers* ovate, versatile; *ovary* free, globose; *style* very short or none; *stigma* simple; *berry* often pulpy, one-celled; *seeds* 4—5 or fewer by abortion, erect, osseous; *albumen* fleshy, hard; *embryo* erect; *cotyledons* lanceolate. Climbing *shrubs* with tumid separable joints, the lower *leaves* opposite, the upper alternate; small greenish *flowers*.

CISSUS. (De Cand. i. 627.)

CISSUS ACIDA. (Linn.) South America.

CISSUS SETOSA. (Roxb.) Bengal.

Every part of these plants exceedingly acrid; the leaves toasted and oiled are applied to indolent tumours to bring them to suppuration. (L.)

Cissus salutaris. (H. B. et Kunth.) South America.
Has a root useful in dropsical cases. (L.)

Vitis. (De Cand. i. 633.)

**Vitis vinifera. (Linn.) *Grape vine.*
June. Native of Asia.

Numerous varieties of this plant are cultivated; fruit, *grapes*, *uvæ*, esculent when ripe, cooling and antiseptic; in large quantities diuretic and laxative, very useful in bilious and putrid fevers, dysentery, and all inflammatory affections; raisins more laxative then the fresh fruit; juice made into a variety of wines, also inspissated, and made into sugar. *Dried grapes*, *Uvæ siccatæ*, *Raisins*, from Barbary, in jars. *Raisins of the sun*, *Uvæ passæ majores;* these and the other raisins are prepared by being left to wither a little on the vine, the stalk being cut half-way through, then gathered and dipped in a ley of wood-ash and barilla, at 12 or 15 deg. Baumé, sp. gr. 1·094 to 1·116, to every four gallons of which are added a handful of salt and a pint of oil, or a pound and a half of butter, and then drying them in the sun; they lose about two-thirds of their weight, and become covered with a saccharine exudation; *Denia raisins*, *Malaga raisins*, *Valencia raisins*, *Belvidere raisins*, *Lexia raisins*, *Muscatel raisins*, *Bloom raisins*, *Sultana raisins*, *Uvæ apyrenæ* (small, yellowish red, without stones), *Black Smyrna raisins*, *Red Smyrna raisins*, *Currants*, *Uvæ minores Corinthiacæ*, *East Indian raisins* (Kishmish, from the small Schiraz grapes). All these dried grapes are used for food, or fermented with water, and made into wine. *Rape*, *Vinacea*, the cake left on pressing grapes: it is fermented with water, and distilled for brandy.

Order 42.—GERANIACEÆ. (De Cand. i. 637.)

Sepals five, persistent, ribbed, more or less unequal, with an imbricated æstivation, one sometimes saccate, or spurred at the base; *petals* five, alternating with the sepals, unguiculate, equal or unequal, either hypogynous or perigynous; *stamens* usually monadelphous, hypogynous, double the number of the petals, some occasionally sterile, equal or unequal; *ovary* in appearance, five-celled, terminating in a long thick style, crowned by five stigmas, but in reality the torus is elongated over the slender, subpentagonal axis; *carpels* five, submembraneous, indehiscent, one-celled, two-seeded, addressed to the base of the torus, having at their apex five filiform styles, which are closely adnate to the furrows in the torus, and terminate at the apex in five short, simple, acute stigmas; after fecundation, the styles twist up in various modes from base to apex, and thus draw the carpels out from the calyx, and in a short time both fall off from the torus; *seed* in the carpels solitary, pendulous, exalbuminous; *embryo* curved; *radicle* deflexed and turned towards the base of the carpel; *cotyledons* foliaceous, convolute, and plaited. *Herbaceous plants* or *shrubs*, with tumid stems separable at the joints, and either opposite or alternate *leaves*, with pedunculate *inflorescence*.

Slightly acrid or acid, vulnerary and astringent.

Erodium. (De Cand. i. 644.)

*Erodium cicutarium. (Leman.) (E. B. 1768.) *Hemlock stork's-bill.*
Fl. pale red. May, September. Annual. Waste ground.

*Erodium moschatum. (Willd.) (E. B. 902.) *Musky stork's-bill.*
Fl. rose-coloured. June, July. Annual. Mountainous pastures.
Astringent and detersive, used in poultices.

GERANIUM. (De Cand. i. 639.)

*GERANIUM COLUMBINUM. (Linn.) (E. B. 157.) *Long-stalked crane's-bill, Dove's-foot.*

Fl. bluish or rose-coloured. June, July. Annual. Dry pastures.

*GERANIUM ROBERTIANUM. (Linn.) (E. B. 1486.) *Gratia Dei, Herb Robert.*

Fl. deep crimson, sometimes white. May, August. Annual. Common.

*GERANIUM ROTUNDIFOLIUM. (Linn.) (E. B. 157.) *Round-leaved crane's-bill.*

Fl. reddish-purple. June, July. Annual. Pastures and waste grounds.

*GERANIUM SANGUINEUM. (Linn.) (E. B. 272.) *Bloody crane's-bill.*

Fl. reddish-purple. July. Perennial. Alpine or limestone pastures.

*GERANIUM SYLVATICUM. (Linn.) (E. B. 121.) *G. batrachyoides, Blue dove's-foot, Wood crane's-bill.*

Fl. purplish-blue, with crimson veins. July. Perennial. Woods.

Astringent and detersive; used in poultices. (G.) *G. Robertianum* is a popular remedy in Wales in nephritic complaints. (L.)

GERANIUM MACULATUM. (Linn.) *American crane's-bill.* Canada and Carolina.

Root, *Geranium, P. U. S.*, boiled in milk, used in the cholera of infants. (G.) A most powerful astringent, containing considerably more tannin than kino; according to Bigelow, it is particularly suited to the treatment of such diseases as continue from debility after the removal of the exciting cause; tincture an excellent local application in sore throat and ulcerations of the mouth; used in powder, extract, or tincture. (L.)

GERANIUM TUBEROSUM. (Linn.) *Bulbous-rooted crane's-bill.* South of Europe.

Root in wine used as a wash in inflammation of the vulva.

PELARGONIUM. (De Cand. i. 649.)

PELARGONIUM CAPITATUM. (Ait.) *Rose-scented Pelargonium,* or *Stork's-bill.* Cape of Good Hope.

PELARGONIUM ODORATISSIMUM. (Willd.) *Sweet-scented Pelargonium,* or *Stork's-bill.* Cape of Good Hope.

PELARGONIUM ROSEUM. (Ait.) *Rose-coloured Pelargonium,* or *Stork's-bill.* Cape of Good Hope.

These three species of Pelargonium yeild an essential oil by distillation, which somewhat resembles otto of roses in flavour, and is much used for adulterating otto of roses. The oil of Pelargonium contains an acid, called *Pelargonic acid*, which combined with ether is used for giving the whiskey flavour to spirits. *Pelargonic acid* is produced artificially by the action of nitric acid on oil of rue.

Order 43.—TROPÆOLEÆ. (De Cand. i. 683.)

Calyx five-partite, coloured, upper segment spurred at the base, spur free; *petals* five, unequal, irregular, inverted on the calyx, two upper sessile and remote, inserted on the fauces of the spur, three lower stalked, smaller, sometimes abortive; *stamens* eight, perigynous, distinct; *anthers* innate, erect, two-celled; *ovary* three-cornered, made up of three carpels; *styles* three, united into one; *stigmas* three; *carpels* three; one-celled, one-seeded; *seeds* large, exalbuminous; *embryo* large; *cotyledons* straight, distinct when young, afterwards closely coherent; *radicle* hidden between the processes of the cotyledons. Smooth *herbaceous* plants, with alternate peltinerve *leaves* and axillary one-flowered peduncles.

Tropæolum. (De Cand. i. 683.)

**Tropæolum majus. (Linn.) *Garden nasturtium, Indian cress.* Fl. deep orange. July, August. Annual. Native of Peru.

Tropæolum minus. (Linn.) *Smaller nasturtium.* Peru.

Eaten in salads, antiscorbutic, excite the appetite, assist digestion, externally used in stubborn itch.

Tropæolum tuberosum. (Flor. Per.) Peru.

Root eaten.

Order 44.—BALSAMINEÆ. (De Cand. i. 685.)

Calyx two-sepalled; *sepals* small, deciduous, opposite, often mucronate, with an imbricated æstivation; *petals* four, hypogynous, cruciate, two outer ones alternate with the sepals, and callous at the apex, upper one arched, emarginate, lower entire, prolonged at the base into a spur, two inner ones alternate with the former, equal, often bifid or appendiculated; *stamens* five, hypogynous; *filaments* short, thickened at apex; *anthers* subconnate, the three lower stamens opposite the petals, with bilocular anthers, the two upper opposite the upper petal, with one or two celled anthers; *anthers* dehiscing by a longitudinal chink; *ovary* one; *style* none; *stigmas* five, or united into a single sessile short stigma; *capsule* of five valves, dehiscing elastically; *placenta* central, five angular, the membraneous angles extending into the valvular suture, and therefore the young capsule is five-celled; *seeds* pendulous, numerous, exalbuminous; *embryo* straight; *radicle* superior. Succulent *herbaceous plants*, with simple, opposite, or alternate *leaves*, without stipules, with an axillary pedunculated *inflorescence*.

Impatiens. (De Cand. 687.)

*Impatiens noli tangere. (Linn.) (E. B. 937.) *Touch-me-not. Yellow Balsam.*

Fl. yellow, spotted with red. July, August. Annual. Rare. Near Guildford, Surrey; Yorkshire.

Herb diuretic, capable of producing a diabetes, but extremely uncertain in its operation. (G.)

Liquidambar. (Lindl. Fl. Med. 321.)

Liquidambar altingia. (Blume.) *Altingia excelsa.* (Noronha.) *Ras-sa-ma-la.* Java.

Bark with a hot and bitterish taste, yielding, when wounded, a fragrant honey-like balsam; the latter is *liquid storax*, a stimulating expectorant substance, acting in the same way as solid storax, that is to say, influencing the mucous membranes, especially that which lines the air passages. But although this tree undoubtedly produces the fine liquid storax, or *Rasamala* of the Malayan Archipelago, it is probable that the principal part of that in use is obtained from *L. orientale*, for

it has been ascertained by Dr. Pereira that all the storax imported for seven years came from Trieste. (L.)

LIQUIDAMBA RORIENTALE. (Mill.) *L. imberbe, Platanus orientalis.* Cyprus and East of Europe.

Produces by incision excellent white turpentine. The common Cypriots toast and suck morsels of the wood and bark, esteeming them a specific remedy for fevers. (L.)

LIQUIDAMBER STYRACIFLUA. (Linn.) *Styrax aceris folio.* (Raj.) *Sweet-gum.* Mexico, and Southern States of North America.

A balsamic juice flows from the trunk of the tree when wounded, which is called *Liquidamber*, or *Copalm balsam.* This is a transparent liquid, of the consistence of thin honey, of a yellowish colour, agreeable balsamic odour, and bitter, acrid taste. An inferior product is obtained by boiling the young branches in water, and skimming off the fluid which rises to the surface.

ORDER 45.—OXALIDEÆ. (De Cand. i. 683.)

Calyx of five, persistent, equal sepals, or five-parted; *petals* five, hypogynous, equal, unguiculate; *stamens* ten, the five opposite the petals longest; *filaments* subulate, generally monadelphous; *anthers* two-celled; *ovary* free, with five angles and five cells; *styles* five, filiform; *stigmas* capitate or somewhat bifid; *capsule* ovate or oblong, membraneous, with five cells, and from five to ten valves; *seeds* few, fixed to the central angle of the cells, ovate, striated, enclosed in a fleshy arillus, which opens with elasticity; *embryo* inverted; *cotyledons* foliaceous. *Herbaceous* plants or under *shrubs*, with alternate, rarely opposite *leaves.*

AVERRHOA. (De Cand. i. 689.)

AVERRHOA BILIMBI. (Linn.) Bengal.

A syrup is prepared with the juice, and a conserve with the flowers, employed in India in the treatment of fevers. (O'Sh.)

AVERRHOA CARAMBOLA. (Linn.) *Kamarunga.* Bengal.

Fruit used in pickle, in curries, and as an ingredient in several native electuaries. The dyers also employ it very extensively. (O'Sh.) The fruits of both of these are acid, and are made into preserves with sugar. (G.)

OXALIS. (De Cand. i. 690.)

*OXALIS ACETOSELLA. (Linn.) (E. B. 762.) *Acetosella, Alleluja, Lujula, Trifolium acidum, Common wood sorrel, Green sauce.*

Fl. white. May, June. Perennial. Woods. Common.

Herb in salads very refreshing, acidulous, antiputrescent, makes a very pleasant whey; used for the extraction of salt of sorrel. (G.) Taken as a salad, it forms a good scorbutic; infused in milk or water, it forms a grateful drink in fevers and inflammatory cases. (L.)

*OXALIS CORNICULATA. (Linn.) (E. B. 1726.) *Yellow procumbent wood sorrel.*

Fl. yellow. May, June. Annual. Shady waste ground, Devon.

Qualities the same as those of O. acetosella.

OXALIS COMPRESSA. (Jacq.) Cape of Good Hope.

OXALIS FRUTESCENS.

OXALIS DODECANDRIA.

OXALIS STRICTA. (Linn.) *Jamaica wood sorrel.*
Acid, cooling.

OXALIS TUBEROSA. (Sav.) Chili.
Root like potatoes, herb acid.

ORDER 46.—ZYGOPHYLLEÆ. (De Cand. i. 703.)

Calyx of five sepals, distinct, or very slightly connected at the base; *petals* five, alternating with the sepals, inserted on the receptacle; *stamens* ten, distinct, hypogynous, five opposite the petals, five alternating with the petals; *ovary* simple, five-celled; *styles* five, coalescing in one; *fruit* capsular, with four or five angles or wings, and four or five cells; *seeds* usually numerous, sometimes exalbuminous; *embryo* straight; *radicle* superior; *cotyledons* leafy. *Herbaceous* plants, *shrubs*, or *trees*, with opposite, stipulate, generally pinnate *leaves;* with white, blue, red, or yellow *flowers*, either solitary, or in pairs or threes.

BALANITES. (De Cand. i. 708.)

(Placed by Endlicher under genus "*Olacinies affine.*")

BALANITES ÆGYPTIACA, (Delille.) *Ximenia Ægyptiaca*, (Linn.)
Africa, cultivated in Egypt.

Leaves anthelmintic. Unripe drupe acrid, bitter and purgative, but when ripe eaten without inconvenience. The fruit, *Egyptian myrobalans*, sometimes mixed with true myrobalans in commerce.

GUAIACUM. (De Cand. i. 707.)

GUAIACUM OFFICINALE. (Linn.) *Lignum-vitæ tree.* India.

Wood, *guaiaci lignum*, *lignum sanctum*, *lignum vitæ*, resinous, hot, aromatic, diaphoretic, diuretic, used in dropsy, gout, and especially in the venereal disease; in warm climates, yields *gum guaiacum*, or, more correctly, *guaiacum resin;* leaves detergent, used in scouring floors, and washing printed linens; the wood is excessively hard and compact. (G.) Internally taken, either wood or resin excites a sensation of warmth in the stomach, and dryness of the mouth and throat. It increases the heat of the skin, accelerates the pulse, and proves diaphoretic if the patient be kept warm, or diuretic if the surface of the body be exposed to the air. In large doses it acts as a purgative. It is also given in cases of foul ulcers, hospital gangrene, thickened ligaments, mercurial ulcerations, and in various forms of scrofula. (O'Sh.) Continued use of the wood occasions heartburn, flatulence, and costiveness. (Pereira.)

GUAIACUM SANCTUM. (Linn.) Porto Rico, South America.

Guaiacum in tears, *Guaiacum in lachrymis*, is said to be exuded by this species.

PORLIERA. (De Cand. i. 707.)

PORLIERA HYGROMETRICA. (Ruiz et Pav.) Chili, Peru.

Wood sudorific, antirheumatic. Properties similar to those of Guaiacum. (L.)

TRIBULUS. (De Cand. i. 703.)

TRIBULUS TERRESTRIS. (Linn.) *Caltrops.* South of Europe, Barbary.

Herb detersive; astringent, vermifuge; seeds cordial.

ZYGOPHYLLUM. (De Cand. i. 705.)

ZYGOPHYLLUM FABAGO. (Linn.) *Bean caper.* Syria.
Vermifuge.

ORDER 47.—RUTACEÆ. (De Cand. i. 709.)

Calyx 3—5 sepaled, the sepals more or less united together, thus making the calyx either dentate, cleft, or partite; *petals* (very rarely none) generally as many as the sepals, often unguiculate, distinct; *disk* fleshy, glandular, surrounding the ovary, arising from the receptacle, external to the petals, bearing the stamens on the upper part; *stamens* usually double the number of petals; *carpels* as many as the sepals, (sometimes by abortion fewer,) either distinct, or united at the base, or perfectly connate; *style* arising from the centre of the ovary, single, divided into as many stigmas as there are ovaries; *carpels* when ripe generally distinct, one-celled, dehiscent; *seeds* inverted, affixed to the inner angle; *embryo* straight, compressed; *radicle* superior. *Herbs* or *shrubs*, with opposite or alternate stipulate *leaves*, and axillary or terminal *flowers*. All the parts are aromatic.

ANTIDESMA. (Endl. Gen. pl. 287.)

ANTIDESMA ALEXITERIA. (Willd.) *Noela tali. Laurel-leaved antidesma.* East Indies.

Fruit acid, like the barberry; a decoction of the leaves is reputed to be an antidote against the bite of serpents; the bark is used for making ropes.

DICTAMNUS. (De Cand. i. 712.)

**DICTAMNUS FRAXINELLA. (Pers.) *Dictamnus albus.* (Var.) *Bastard dittany. Fraxinella.*

Fl. purple or white. June, July. Perennial. South of Europe.

Root rather bitter, cordial, cephalic, alexiterial, uterine, anti-epileptic, vermifuge; in powder ℈j. twice a day.

DIOSMA. (De Cand. i. 714.)

DIOSMA CRENATA. (D. C.) *Barosma crenata, Bucku.* Cape of Good Hope.

Powder of the leaves strong smelling, tonic, astringent, and diuretic; in gleet and other diseases of the urinary passages.

DIOSMA ODORATA. (D. C.) D. CRENULATA, D. SERRATIFOLIA. (Lodd.) Cape of Good Hope.

Plants whose leaves are collected in South Africa under the name of Bucku; the infusion is much praised as a remedy in chronic inflammations of the bladder and urethra, and in chronic rheumatism.

ELAPHRIUM. (De Cand. i. 723.)

ELAPHRIUM TOMENTOSUM. (Jacq.) *Fagara octandra.* (Linn.) *Zanthoxylum octandra.* Curaçoa and neighbouring islands.

The tree abounds in a fragrant, balsamic, glutinous resin, which is believed to furnish one of the sorts of *Tacamahaca.* (L.) Yields *Tacamahaca* in the shell. (G.)

EVODIA. (De Cand. i. 724.)

EVODIA AROMATICA. *Agathophyllum aromaticum, E. ravensara, Ravensara aromatica, Ravensara.* Madagascar.

Bark aromatic, red; nut resembles both cloves and pimento; kernel

Clove nutmeg, *Madagascar nutmeg*, extremely hot, biting, with a strong spicy smell; leaves an excellent tonic cordial spice, form an agreeable cordial, yield an oil.

EVODIA FEBRIFUGA. (St. Hil.) Brazil.

Bark and young wood extremely bitter and astringent; used with great success in Brazil as febrifuges. (L.)

GALIPEA. (De Cand. i. 731.)

GALIPEA CUSPARIA. (St. Hil.) *Cusparia febrifuga*, *Bonplandia trifoliata*. Tropical America.

Bark, *Angostura bark*, *Cuspariæ cortex*, in pieces of different lengths, aromatic, intensely bitter, tonic, stimulant, very useful in dyspepsia, diarrhœa, and dysentery; dose, gr. v. to xx. Imported from Cadiz and West Indies in casks. (G.) Said by Humboldt to produce Angostura bark, but denied by Dr. Hancock, who assigns it to G. officinalis.

GALIPEA OFFICINALIS. (Lindl. p. 211.) South America.

Oraguri of the natives. According to Dr. Hancock, this, which he found to yield the true *Angostura*, or *Carony bark*, is essentially different from the Cusparia febrifuga of Humboldt. He considers it one of the most valuable febrifuges we possess, being adapted to the worst and most malignant bilious fevers, while those in which cinchona is administered are simple intermittents. The natives use the bruised bark as a means of intoxicating fishes.

Malambo bark, an aromatic bark with very active, bitter, astringent, febrifugal properties, a native of Columbia, the tree of which is unknown, is supposed by Bonpland to be furnished by some plant allied to Galipea.

PEGANUM. (De Cand. i. 712.)

PEGANUM HARMALA. (Linn.) *Ruta sylvestris*, *Harmel wild rue*. East of Europe.

Seeds very inebriating, soporific, causing a happy forgetfulness and pleasant delirium.

PTELEA. (Lind. Fl. Med. 215.)

PTELEA TRIFOLIATA. (Linn.) *Carolina shrub trefoil*. United States.

Young green shoots anthelmintic; fruit aromatic and bitter, a good substitute for hops.

RUTA. (De Cand. i. 710.)

RUTA ANGUSTIFOLIA. (Pers.) *Narrow-leaved rue*. South France.

Vermifuge.

**RUTA GRAVEOLENS. (Linn.) *Ruta hortensis*, *Rue*.

Fl. yellow. June, July. Perennial. South of Europe.

Leaves, *Rutæ folia*, powerfully resolvent, emmenagogue, carminative, diuretic; also alexiterial, nervine, cephalic, antispadmodic, and anaphrodisiac; dose gr. xv. to ℈ij.; externally rubefacient.

TICOREA. (De Cand. i. 730.)

TICOREA FEBRIFUGA. (St. Hil.) Brazil.

Bark intensely bitter, astringent, febrifugal.

TICOREA JASMINIFLORA. (St. Hil.) Brazil.

A decoction of the leaves taken by the Brazilians as a cure for frambœsia.

ZANTHOXYLUM. (De Cand. i. 725.)

ZANTHOXYLUM ALATUM. (Roxb.) (Lind. Med. Bot. 217.) Nepal, and north of Bengal.

Aromatic and pungent; seeds used medicinally by the natives.

ZANTHOXYLUM AVICENNE. (D. C.) *Fagara Avicennæ.* China.

Used in China as an antidote against all poisons, undoubtedly a powerful stimulant.

ZANTHOXYLUM CLAVA HERCULIS. (Linn.) *Tooth-ache tree.* West Indies.

Leaves sudorific, diuretic, sialagogue, when taken internally; used in rheumatism and palsy; expressed juice of the roots, cochl. ij. antispasmodic; roots in infusion used as a collyrium; powder of bark of roots useful in dressing putrid sores; tincture found by Dr. Gillespie to be a good febrifuge; according to others, the decoction is antisyphilitic.

ZANTHOXYLUM FRAXINEUM. (Willd.) *Z. caribbæum, Prickly ash, Prickly yellow wood.* United States.

Bark, *Zanthoxylon, P. U. S.*, febrifuge, dyes yellow. (G.) Has a good deal of reputation in North America as a remedy in chronic rheumatism, generally given in decoction; has also been used as a topical stimulant, producing a powerful effect when applied to secreting surfaces and to ulcerated parts. (L).

ZANTHOXYLUM HERMAPHRODITUM. (Willd.) *Fagara guianensis, Cucatin.* Guiana.

Used as spice.

ZANTHOXYLUM PIPERITUM. (D. C.) *Piper Japonicum, Japan pepper.* Japan.

Bark, leaves and fruit, powerfully aromatic, used as spice: the active principle is chiefly in the fresh leaves, the dry bark, and the pericarp; the doctors of the country apply a poultice, made of the bruised leaves and rice flour, to sore throats.

ORDER 48.—SIMARUBEÆ. (De Cand. i. 733.)

Flowers hermaphrodite, or occasionally unisexual: *calyx* 4—5 parted, persistent; *petals* 4—5, hypogynous, erect, deciduous; *stamens* equal in number to the petals, or twice as many, inserted on a hypogynous disk, free; *ovary* with as many lobes as there are petals; *style* one, filiform, enlarged at the base; *carpels* as many as the petals, attached to a common axis, capsular, bivalved, opening inwards, one-seeded; *seeds* without albumen, pendulous; *cotyledons* two, thick; *radicle* short, superior. *Trees* or *shrubs*, found principally in the tropical regions of the New World, with very bitter bark, and milky juice, having alternate, pinnate, exstipulate *leaves*, and whitish, green, or purple *flowers*.

NIMA.

NIMA QUASSIOIDES. (Hamilt.) *Simaruba quassioides.* (Don.) Nepal, Himalaya mountains.

Extremely bitter. Used as a substitute for *quassia.*

Quassia. (De Cand. 733.)

Quassia amara. (Linn.) *Coissi quassia.* South America.

Wood of the root very bitter, febrifuge, stomachic: used in gout, dose gr. x. to ʒj., three or four times a day, or in infusion; bark of the root esteemed in Surinam the most powerful, but not to be had in Europe. (G.)

Simaba. (De Cand. i. 733.)

Simaba cedron. (Planchon.) *Cedron.* New Granada. Banks near San Pablo of the Magdalena. Isle de Caybo, coast of the Pacific.

The cotyledons of the seed are the officinal part, and are said to possess invaluable specific qualities against the bites of snakes, intermittents, and stomach complaints generally; by some, considered to be also a specific against madness. The method of administering it is to mix a little with water, and apply it to the wound, and then to scrape about two grains into brandy or water, and administer it internally. Doubts are entertained of the alleged specific qualities of the drug.

Simaruba. (De Cand. i. 733.)

Simaruba excelsa. (D. C.) *Picræna excelsa.* (Lind.) *Quassia excelsa.* (Swartz.) *Quassia polygama, Bitter wood.* Jamaica.

Wood makes a good bitter infusion, ʒii—iv. to 1lb of cold water; or the powder, gr. xv. may be taken. (G.) The intensely bitter timber furnishes the *Quassia chips* of the shops. (L.)

Simaruba officinalis. (De Cand.) *S. amara. Quassia simarouba, Simaruba, Mountain damson, Stave wood.* Guiana.

Bark *Simarubæ cortex*, inodorous, bitter, astringent; useful in dysentery, intermittent fever, dyspepsia, the whites; dose ℈j. to ʒss. (G.) Infusion more bitter than the decoction. (L.)

Simaruba versicolor. (Aug. de St. H.) Brazil.

So intensely bitter that no insects will attack the wood.

Order 49.—OCHNACEÆ. (De Cand. i. 735.)

Sepals five, persistent, æstivation imbricated; *petals* hypogynous, definite, sometimes twice as many as the sepals, deciduous, spreading, imbricated in æstivation; *stamens* five, opposite the sepals, or ten, or indefinite, arising from a hypogynous disk; *filaments* persistent; *anthers* bilocular, innate, opening by pores: *carpels* equal in number to the petals, lying upon an enlarged tumid fleshy disk (the gynobase), their styles combined in one ovule, erect; *fruit* composed of as many pieces as there were carpels, somewhat drupaceous, one-seeded, articulated with the gynobase, which grows with their growth; *seeds* without albumen; *embryo* straight; *radicle* short; *cotyledons* thick. *Trees* and under *shrubs*, sometimes downy, having a watery juice, with alternate bistipulated *leaves*, and racemose *inflorescence.*

Gomphia. (De Cand. i. 736.)

Gomphia angustifolia. (Vahl.) Ceylon and continent of India.

Root and leaves bitter; a decoction in milk or water employed in Malabar as a tonic, stomachic, and anti-emetic.

Walkera. (De Cand. i. 739.)

Walkera serrata. (Willd.) Ceylon and Malabar.
Properties the same as Gomphia angustifolia.

Order 50.—CORIACEÆ. (De Cand. i. 739.)

Flowers either hermaphrodite, or monœcious, or diœcious; *calyx* campanulate, five-parted, ovate; *petals* five, alternate with the lobes of the calyx, and smaller than they are, fleshy, with an elevated keel in the inside; *stamens* ten, arising from the torus, five betweeen the lobes of the calyx and the angles of the ovary, five between the petals and the furrows of the ovary; *filaments* filiform; *anthers* oblong, two-celled; *ovary* seated on a thickish gynobase, five-celled, five-angled; *style* none; *stigmas* five, long, subulate; *ovules* solitary, pendulous, or ascending; *carpels* five, when ripe close together, but separate, indehiscent, one-seeded, sometimes surrounded with glandular lobes; *seed* pendulous or ascending; *albumen* none; *embryo* straight; *cotyledons* two, fleshy. *Shrubs* with opposite branches, often three on each side, two of them being secondary to an intermediate principal one; *leaves* opposite or alternate, simple, entire; *buds* scaly; *racemes* terminal and axillary.

Coriaria. (De Cand. i. 739.)

Coriaria myrtifolia. (Linn.) *Myrtle-leaved sumach.* Shores of Mediterranean.

Leaves used in tanning and dyeing, the same as sumach; sometimes mixed with senna. (G.) Fruit a dangerous poison, exciting violent fits of tetanus, giving place to apoplectic coma; senna adulterated with the leaves equally dangerous; many fatal cases on record. (L.)

Sub-class II.—CALYCIFLORÆ.

Order 51.—CELASTRINEÆ. (De Cand. ii. 2.)

Sepals 4—5, coherent at the base, not adherent to the ovary, imbricated in æstivation; *petals* as many as the sepals, and alternate with them, very rarely wanting: *stamens* as many as the sepals, alternate with the petals, and therefore opposite to the sepals, ambiguously perigynous in their insertion; *anthers* two-celled; *ovary* free, surrounded by a fleshy disk, 2—3—4 celled, cells one, or many-seeded; *ovules* erect, rarely pendulous; *style* one or none; *stigma* 2—4 cleft; *pericarp* capsular, baccate, drupaceous, or samaroideous, various in form, and often deformed by the abortion of the cells; *seeds* in many, especially in the capsular ones, with an arillus; *albumen* none or fleshy; *embryo* straight in the axis of the seed. *Shrubs* or *trees* often with stipulated alternate or opposite *leaves.*

Catha. (Endl. Gen. Pl. 1086.)

Catha edulis, and Catha spinosa. (Forskal.) *Subbaree Kât, Muktaree Kât. Kât* or *Khât.*

The Arabs make use of this plant in large quantities as an excitant; it heightens the spirits, and creates wakefulness. The part of the plant used is the leaf, and the Arabs believe it to be a preventive against infections of all kinds. The Subbaree variety is the most esteemed.

Celastrus. (De Cand. ii. 5.)

Celastrus macrocarpus. (D. C.) Peru.
Seeds oily.

CELASTRUS PANICULATIS. (Willd.) *C. nutans.* (Roxb.) East Indies.

A stimulant and useful medicine according to Dr. Royle. (L.) An empyreumatic black oily fluid is distilled from the seeds, which is administered in doses of a few drops daily in emulsions, with a beneficial effect. (O'Sh.)

EUONYMUS. (De Cand. ii. 3.)

EUONYMUS EUROPÆUS. (Linn.) (E. B. 362.) *Fusian prick-wood, Spindle-tree.*

Fl. greenish-white. May. Large shrub. Hedges.

Seeds, three or four, emetic and purgative; externally used as a powder to kill lice, &c.; wood makes good charcoal; fruits dye a yellowish-red, or rusty colour. (G.)

EUONYMUS TINGENS. India.

Used to mark the *Tika* on the forehead of the Hindoos, and is considered by the natives as useful in diseases of the eyes. (O'Sh.)

ELÆODENDRON. (De Cand. ii. 10.)

ELÆODENDRON ROXBURGHII. (W. and A.) *Neerija dichotoma.* (Roxb.) India.

The fresh bark of the root, rubbed with plain water, is applied by the natives externally to almost every sort of swelling; it is a very strong astringent, possessing scarcely any other sensible quality. (Roxb.)

ILEX. (De Cand. ii. 13.)

*ILEX AQUIFOLIUM. (Linn.) (E. B. 496.) *Common holly.*

Fl. white. May, June. Large shrub. Hedges and woods.

Root, bark, berries, acrid, purgative; externally used, emollient, and resolvent; berries roasted, used for coffee; bark yields birdlime. (G.) Dr. Rousseau asserts that the leaves are equal to Peruvian bark in the cure of intermittent fever; the root and bark are said to be emollient, expectorant, resolving, and diuretic. Haller recommends the juice of the leaves in icterus; Keil also affirms that he has used the bark successfully in cases of epidemic intermittent fever, when Peruvian bark has failed.

ILEX VOMITORIA. (Ait.) *Cassine perigua.* (Mill.) *Ilex ligustrina.* (Jacq.) Florida and Carolina.

Leaves, *Paraguay tea,* diuretic in infusion, and diminish hunger, but if too much is used, emetic; an infusion of the high-dried leaves, is drank as an exhilarant. (G.) A strong decoction of this plant, called *Black drink,* is used by the tribe of the Creek Indians at the opening of their councils. (L.)

MAYTENUS. (De Cand. ii. 9.)

MAYTENUS CHILENSIS. (D. C.) *Celastrus maytenus.* (Willd.) *Senacia maytenus.* (Lamb.) Chili.

A decoction of the young branches used in Chili as a wash for swellings produced by the poisonous shade of the tree called Lithi. (L.)

MYGINDA. (De Cand. ii. 12.)

MYGINDA URAGOGA. (Jacq.) Carthagena.

Root, in infusion or decoction, a most powerful diuretic.

MYGINDA GONGONHA. (D. C.) *Cassine Gongonha.* (Mart.) *Ilex paraguariensis.* (Aug. de. St. Hil.) *Maté. Yapon, Yerba de palos, Paraguay tea.*

Said by Von Martius to deserve notice as a diuretic.

PRINOS. (De Cand. ii. 16.)

PRINOS GLABER. (Linn.) *Apalachian tea.* North America.

Leaves used as tea.

PRINOS VERTICILLATUS. (Linn.) *Black alder.* United States.

Bark febrifuge. (G.) Considered as a valuable tonic, especially in cases of great debility, accompanied by fever; as a corroborant in anasarcous and other dropsies, and especially as a tonic in cases of incipient sphacelus or gangrene: berries also reputed tonic, but Bigelow asserts that they are emetic. (L.)

STAPHYLEA. (De Cand. ii. 2.)

STAPHYLEA TRIFOLIA. (Linn.) *Bladder-nut tree.* North America.

Kernels eaten.

ORDER 52.—RHAMNEÆ. De Cand. ii. 19.)

Tube of the *calyx* adhering to the ovary; *lobes* 4—5, valved in æstivation; *petals* equal in number to, and alternate with, the lobes of the calyx; *stamens* as many as the petals opposite to them; *anthers* bilocular; *ovary* superior, or half superior, from two to four celled, cells with one ovule; *style* single; *stigmata* 2—4; *pericarp* generally indehiscent, a berry or drupe; *seeds* erect, without arillus; *albumen* none, or mostly fleshy; *embryo* straight, with an inferior radicle, and large flat cotyledons. *Shrubs* or *small trees*, with simple, alternate, very rarely opposite *leaves* often stipulate.

BERCHEMIA. (De Cand. ii. 22.)

BERCHEMIA VOLUBILIS. (D. C.) *Ænopilia volubilis.* (Schult.) *Rhamnus volubilis.* (Linn.) Carolina and Virginia.

Roots prescribed in cachectic disorders; said to be antisyphilitic, (O'Sh.)

CEANOTHUS. (De Cand. ii. 29.)

CEANOTHUS AMERICANUS. (Linn.) *New Jersey tea.* United States.

Leaves used for tea. (G.) An infusion of the twigs has been employed on account of its astringency to stop gonorrhœal discharges; root said to be antisyphilitic. (L.)

HOVENIA. (De Cand. ii. 40.)

HOVENIA DULCIS. (Thunb.) Japan.

Peduncle fleshy, sweet-tasted, esculent.

PALIURUS. (De Cand. ii. 22.)

PALIURUS ACULEATUS. *Rhamnus paliurus.* South Europe.

Seeds diuretic; root and leaves astringent, detersive; fruit incisive.

RHAMNUS. (De Cand. ii. 23.)

**RHAMNUS ALATERNUS. (Linn.) *Evergreen privet.*

Fl. greenish. April, June. Large shrub. South Europe.

Some sap green is made from it; laxative.

*RHAMNUS CATHARTICUS. (Linn.) (E. B. 1629.) *Spina cervina, Buckthorn.*

Fl. yellowish-green. June. Large shrub. Hedges.

Berries a powerful hydragogue, purgative; usually made into a syrup; juice made into sap green; bark, dyes yellow; inner bark is cathartic. The berries are globular, bluish-black, with four cells, and as many seeds, by which last character they may be easily distinguished by druggists from the fruit of R. frangula, which is supposed to be less active.

*RHAMNUS FRANGULA. (Linn.) (E. B. 250.) *Alnus nigra, Black alder tree, Berry-bearing alder tree.*

Fl. greenish. May. Large shrub. Woods and thickets.

Unripe berries used to make sap green; ripe berries purgative and emetic; bark bitter, emetic, detersive, aperitive, and dyes yellow; bark of root violently purgative; wood, *Black dogwood*, makes the best charcoal for gunpowder.

RHAMNUS INFECTORIUS. (Linn.) South Europe.

Berries purgative; unripe berries dried, *French berries, Grana avenionensia*, dye yellow; *Turkey berries*, preferred by the dyers, are a larger variety. They are principally used for dying Maroquin leather yellow.

RHAMNUS AMYGDALINUS, (Desf.) BUXIFOLIUS, (Poir.) OLEOIDES, (Linn.) PUBESCENS, (Poir.) and SAXATILIS, (Linn.) have similar properties.

RHAMNUS LYCIOIDES. (Linn.) *R. niger, Black ramthorn.* Spain.

Fruit in decoction relieves the pain of the gout.

RHAMNUS SANGUINEUS. (Pers.) Spain.

Bark boiled in milk used for the itch.

RHAMNUS THEEZANS. (Linn.) China.

Leaves used to reduce tea, or as a substitute, by the poor in China.

RHAMNUS SICULUS. *Elæodendron argan.*

Nuts pressed for their oil.

ZIZYPHUS. (De Cand. ii. 19.)

ZIZYPHUS ÆNOPLIA. (Mill.) *Z. napeca, Rhamnus ænoplia, Great jujubes.* India.

Unripe fruit stomachic, astringent; juice of the ripe fruit laxative. (G.) The fruit is eaten by the natives, the taste is a very pleasant acid; a decoction of the fresh bark is said to promote the healing of fresh wounds. (Roxb.)

ZIZYPHUS JUJUBA. (Lamb.) *Rhamnus jujuba.* East India and China.

Fruit styptic; bark employed in the Moluccas as a remedy for diarrhœa; the root, with some warm seeds in infusion, in fever. (O'Sh.)

ZIZYPHUS VULGARIS. (Lamb.) *Rhamnus zizyphus, Jujube tree.* Syria, Persia, India.

Fruit, *Jujubes, Jujubæ*, nourishing, mawkish, mucilaginous, pectoral. From this and the former species are prepared the pleasant pectoral lozenges called *Pâte de jujubes* when genuine.

ZIZYPHUS LOTUS. (Lamb.) *Lotus.* Sicily, Portugal.
Fruit eatable, makes a pleasant wine.

ZIZYPHUS SOPORIFERA. (Schult.)
Fruit anodyne, soporific, used in decoction.

ORDER 53.—HOMALINEÆ. (De Cand. ii. 53.)

Calyx funnel-shaped, superior, with from five to fifteen divisions; *petals* alternate with the segments of the calyx, and equal to them in number; *glands* present in front of the segments of the calyx; *stamens* arising from the base of the petals, either singly, or in threes or sixes; *anthers* two-celled, opening longitudinally; *ovary* half inferior, one-celled, with numerous ovules; *styles* from three to five, simple, filiform, or subulate ovules attached to as many parietal placentæ as there are styles; *fruit* berried or capsular; *seeds* small, ovate or angular, with an embryo in the middle of the fleshy albumen. *Trees* or *shrubs; leaves* alternate with deciduous stipules, toothed or entire; *flowers* in spikes, racemes or panicles.

ARISTOTELIA. (De Cand. ii. 56.)

ARISTOTELIA MAQUI. (L'Her.) *A. glandulosa.* Chili.
Fruit eaten with sugar, or rubbed down with water for a drink.

ORDER 54.—TEREBINTHACEÆ. (De Cand. ii. 61.)

Calyx of 3—5 sepals, more or less united at the base; *petals* most frequently equal in number to the sepals, and alternate with them, usually distinct, imbricate, or valved in æstivation; *stamens* rising with the petals from the bottom of the calyx, or from the calycine disk, sometimes equal in number to the petals, and alternate with them, sometimes twice as many; *carpels* numerous, sometimes united, sometimes distinct, monostylous, some in either case generally abortive, and thence the carpels in many instances appear solitary and one-celled; *fruit* drupaceous or capsular; *seeds* few, generally solitary, and without albumen; *embryo* straight, arcuate, or replicate; *cotyledons* various; *radicle* often superior. *Trees* or *shrubs* with alternate generally compound *leaves;* resinous, balsamic, or gummy *bark*, and small *flowers* generally panicled.

AMYRIS. (De Cand. ii. 81.)

AMYRIS HEXANDRA. (L.) (Hamilt.) Nevis.
Mr. Hamilton, who has given an account of this tree, says, that it produces the fragrant fennel-scented substance called *Gum elemi* in Nevis. There is, however, great doubt respecting the origin of this resin. According to Dr. Pereira, *Gum elemi* is brought into this country in three forms:—1st, Elemi in flag leaves, *Resine elemi en pains*, (Guibourt;) *Resina elemi orientalis*, (Martius,) imported from Holland in masses enveloped in palm-leaves, weighing from one to two pounds each; 2nd, *Elemi in the lump*, differing in nothing but colour, being paler, from, 3rd, *Brazilian elemi.* These varieties appear to be produced by different trees, as *Canarum balsamiferum*, *Icica icicariba*, *Balsamodendron zeylanicum*, &c. According to the Edinburgh College, it is the produce of one or more unascertained plants; the London and Dublin Colleges call it the resin of *Amyris elemifera.* (Linn.) Its principal use is as a constituent of the Unguentum elemi.

AMYRIS PLUMIERI. (D. C.) *A. elemifera.* (Linn.)
Yields by incision *Gum elemi;* wood, *Bois de chandelle noir*, split in laths and burned for lights.

AMYRIS TOXIFERA. (Willd.) *A. balsamifera.* (Linn.) West Indies.

Wood, *Jamaica rosewood, Lignum rhodium*, used in cephalic fumigations, burning with a scent of roses; leaves in infusion diaphoretic, aromatic, cephalic; berries used for balsam of copaiba; it also yields a resin, used as a poison in war and hunting, which is, perhaps, that called *Ticuna*. From undescribed trees of this genus Amyris, are produced true or male frankincense and liquid myrrh.

ANACARDIUM. (De Cand. ii. 62.)

ANACARDIUM OCCIDENTALE. (Linn.) *Cassuvium occidentale, Cashew-nut tree.* East and West Indies.

Peduncle of the nut astringent, eatable; juice astringent, made into a kind of wine; kernel of the nut aphrodisiac, used to increase the memory, as also to quicken the genius; shell of the nut contains an acrid oil; exudes gum. (G.) The oil is caustic and thick, blistering when applied to the skin; has been used as a caustic for warts, corns, obstinate ulcers, ringworm, &c.; the vapour of the oil when roasting will often produce violent swelling and inflammation; a gum resembling gum arabic, and called *Cashew gum*, exudes from the bark. (Pereira.) This gum, which in its properties almost entirely agrees with gum arabic, is rather more astringent, is used in Brazil in the same manner as that substance; the bookbinders in the principal towns sometimes wash books with it, which is said to keep off the moths and ants; the fresh acid juice of the flower-stalks is used in lemonade; wine and vinegar, too, are made of it by fermentation; the sympathetic effect which the nut borne about the person has upon chronic inflammations in the eyes, especially such as are of a scrofulous nature, is remarkable. (Martius.) (L.) The black balsam of the fruit is used for the same purposes as that of Semecarpus Anacardium. (O'Sh.)

BALSAMODENDRON. (De Cand. ii. 76.)

BALSAMODENDRON GILEADENSE. (Kunth.) *Amyris gileadensis.* (Linn.) *A. opobalsamum.* (Forsk.) *Protium gileadense, Balm of Gilead tree.* Arabia.

Yields by incision the true *Balm of Gilead* in very small quantities, generally at the rate of three or four drops a day from a branch; even the most resinous trees not yielding more than sixty, whence arises its value; fruit *carpobalsamum*, and branches *xylobalsamum*, vulnerary, antiseptic, and used against barrenness. (G.) The wounded bark yields *opobalsamum*, according to Forskal; this, which is also called *Balsam of Mecca*, is reckoned by the Orientals a perfect panacea, being, according to them, vulnerary, stomachic, alexipharmic, &c.; according to Prosper Alpinus its different qualities depend upon its preparation. (L.)

BALSAMODENDRON KAFAL. (Kunth.) *Amyris kafal, Protium kafal.* Arabia.

A very fragrant resin is obtained from the fruit of this tree; the gum is purgative. (L.)

BALSAMODENDRON KATAF. (Kunth.) *Amyris kataf, Protium kataf, B. myrrha.* Arabia.

According to Ehrenberg, this is the plant yielding myrrh, which exudes from the bark like gum from the bark of a cherry-tree; it promotes the appetite, creates an agreeable warmth in the stomach, and occasions slight constipation. The *Indian bdellium*, a gum-resin resembling myrrh, is supposed to be obtained from some tree of this genus. (L.)

BALSAMODENDRON MUKUL. (Hook.) The *Mukul*, *Googul*, or *Guggar tree*. Scinde.

Yields the gum-resin called *Googul*, the *Mukul* of the Persians and Arabians, and the *Bdellium* of Dioscorides. This is esteemed cordial and stimulant. (Dr. Stocks.)

BALSAMODENDRON PUBESCENS. (Stocks.) *The Bayee balsam-tree*. India.

Young shoots and buds remarkably fragrant when bruised. Yields a tasteless, inodorous, brittle gum, almost wholly soluble in water.

BOSWELLIA. (De Cand. ii. 76.)

BOSWELLIA GLABRA. (Roxb.) India.

Exudes *koondricum*, and by incision yields the *gugul*, or *googul* of the Coromandel coast. The latter is a coarse resin caller *Koonder gum*, which is said to be used for pitching the bottoms of ships.

BOSWELLIA SERRATA. (Stackh.) *B. thurifera*. (Roxb.) *Libanus thurifera*, *Incense*, *Male incense*, *Indian incense*. India.

Yields a gum-resin called *Olibanum*, *Indian olibanum*, chiefly used in the Indian temples as an incense, but also stimulant, astringent, and diaphoretic; prescribed by the native Indian doctors, mixed with clarified butter, in gonorrhœa and bloody flux. There is also a variety of this gum-resin, called *African olibanum*, the source of which is uncertain, the tree supposed to yield it has been named *Plösslea floribunda*, by Endlicher, and placed among Sapindaceæ; but Dr. Royle, and, after him, other botanists, consider it to be a species of Boswellia, and have accordingly named it *B. floribunda*.

BRUCEA. (De Cand. ii. 88.)

BRUCEA ANTIDYSENTERICA. (Mill.) *B. ferruginea*. (L'Her.) *Wooginos*, *False angostura*. Abyssinia.

Inner bark astringent, used to make brucine. (G.) Considered in Abyssinia a most valuable remedy in dysentery and severe cases of diarrhœa, but not known in Europe; it was supposed that a poisonous bark called false angostura was yielded by this plant, but it is now ascertained that it is the bark of the nux vomica; all the statements, therefore, concerning the danger of brucea bark and brucine belong to strychnos, and have nothing to do with brucea itself. (L.)

BRUCEA SUMATRANA. (Roxb.) *Gonus amarissimus*. (Lour.) Sumatra.

Properties similar to those of B. antidysenterica; Dr. Horsfield thinks it would be as serviceable a tonic as quassia. (L.)

BURSERA. (De Cand. ii. 78.)

BURSERA ACUMINATA. (Willd.) West Indies.

A yellow concrete essential oil is yielded by this plant. (L.)

BURSERA GUMMIFERA. (Jacq.) *Jamaica birch-tree.* West Indies.

Yields *Resina chibou*, *cachibou*, or *resine Gommart:* bark has the qualities of Simarouba; root astringent.

Balsam of Rakasira is said to be produced from *Bursera balsamifera.* (Pers.) *Hedwigia balsamifera.* (Swartz.)

CANARIUM. (De Cand. ii. 79.)

CANARIUM BALSAMIFERUM.

Yields a resin resembling elemi.

CANARIUM COMMUNE. (Linn.) *Bois de colophane. Canarium vulgare.* (Rumph.) *Canarium mehenbethene.* (Gaertn.) *Amyris zeylanica.* (Retz.) *Bursera paniculata.* (Lamb.) Indian Islands.

Nuts, *Java almonds*, eaten and made into bread; kernels yield an oil. (G.) The bark yields an abundance of limpid oil with a pungent turpentine smell, congealing into a buttery camphoraceous substance, having the same properties as balsam of copaiba; raw fruit eatable, but apt to bring on diarrhœa; said to yield *East Indian elemi.* (L.)

This plant, Balsamodendron zeylanicum, De C., and Colophonia mauritiana, De C., appear to be the same. *Vide* Lindl. Med. Bot., p. 170.

CNEORUM. (De Cand. ii. 83.)

CNEORUM TRICOCCON. (Linn.) *Chamælea.* (Dioscorid.) *Camelée. Widow wail.* Spain, France.

Acrid, caustic, drastic; a powerful detersive, but dangerous.

COMMIPHORA? (Lindl. Flor. Med.)

COMMIPHORA MADAGASCARIENSIS. (Jacq.) *Amyris commiphora.* (Roxb.) Supposed to be the same tree as *Balsamodendron Roxburghii.* Silnet, Assam, Madagascar.

Produces *Indian bdellium*, a substance resembling myrrh, according to Professor Royle; *Guggul* or *Bengal elemi*, according to Guibourt. (L.) *Bengal elemi* is met with in pieces of bamboo, about 12 inches long and $2\frac{1}{2}$ inches diameter. (Guibourt.) *Indian bdellium* is in roundish pieces, of a dark dull-red colour, more moist than myrrh, and not brittle like it, softening even with the heat of the hand; bitter and a little acrid in taste, with a less agreeable odour. It often has portions of the birch-like bark adhering to it. (Royle.) It is very similar to myrrh, and is sometimes sold for it.

COMOCLADIA. (De Cand. ii. 65.)

COMOCLADIA DENTATA. (Jacq.) Cuba, St. Domingo.

Wood, *Bastard Brazil*, dark red, dyes like Brazil wood; juice dyes the skin of a nearly indelible black colour (G.); juice milky, glutinous, becoming black by exposure to the air, staining the linen or the skin of the same colour, only coming off with the skin itself, and not removable from linen by washing, even if repeated for many years successively; it is supposed by the inhabitants of Cuba that it is death to sleep beneath its shade, especially for persons of a sanguine or fat

habit of body: this is firmly believed, and there is no doubt that it is the most dangerous plant upon the island. (L.)

COMOCLADIA ILICIFOLIA. (Swartz.) *C. angulosa.* (Willd.) *Comocladia tricuspidata.* (Lamb.) *Ilex dodonæa.* (Linn.) St. Domingo.

Wood, *St. Domingo braziletto*, used in dyeing; juice stains the skin black.

HEUDELOTIA. (L. Med. B. 286.)

HEUDELOTIA AFRICANA. (Guillem.) *Balsamodendron Africanum.* (Arnott.) *Niouttout.* Senegal.

Supposed to produce the *African bdellium.* This gum resin is met with among the gum Senegal of commerce; it is in roundish tears of about an inch in diameter, of a yellowish-grey, reddish, or greenish colour, semitransparent, but becoming opaque when long kept.

HOLIGARNA. (De Cand. ii. 63.)

HOLIGARNA LONGIFOLIA. (Roxb.) East Indies.

Similar in qualities to Stagmaria verniciflua, which see.

ICICA. (De Cand. ii. 77.)

ICICA HETEROPHYLLA. (D. C.) *I. aracouchini.* (Aubl.) *Amyris heterophylla.* (Willd.) Guiana.

The wounded branches yield an abundance of a yellowish balsamic aromatic liquid, of a terebinthinous nature, which preserves its fluidity for a long time, and is the *Balsam of acouchi*, esteemed highly by the Caribs as a vulnerary. (L.)

ICICA CARANA. (L.) (H. B. K.) Banks of the Oronoco.

Yields the fragrant substance called *Caranna*, according to most writers.

ICICA HEPTAPHYLLA. (Aubl.) *Amyris ambrosiaca.* (Willd.) Woods of Guiana.

Trunk yields a liquid, limpid, resinous, fragrant substance, which is a valuable remedy for coughs, hardens into a whitish resin, called by the natives *Hyawa* or *Arou aou.* (L.)

ICICA ICICARIBA. (D. C.) *Amyris ambrosiaca.* (Linn.) Brazil.

Yields *Coumia.* (G.) The fragrant fennel-scented resin of Brazil, called *Elemi*, is said to be produced by this tree. De Candolle says, Resin of coumia comes from it, but I do not find such a substance in books. (L.) De Candolle, in the Prodromus, says it is found in Brazil, "ubi dicitur *Icicariba* et *resina Icicæ* Elemio succedanea."

ICICA TACAMAHACA. (H. B. et Kunth.) South America.

Produces one of the bitter resins called *Tacamahaca.* (L.)

Another supposed species of this genus is the Copal of the Mexicans of Papantla and Misantla.

MANGIFERA. (De Cand. ii. 63.)

MANGIFERA INDICA. (Linn.) *Mangifera amba.* (Forsk.) *Mangifera domestica.* (Gaertn.) *Mangoe.* East Indies.

Fruit eaten raw; *pickled mangoes*, used as a sauce; *preserved mangoes*, the fruits peeled and pressed into sheets like brown paper. (G.) This fruit is to the inhabitants of India what the peach is to the Euro-

peans, but the inferior kinds have so much of the turpentine flavour as to be uneatable; from wounds made in the bark there issues a soft reddish-brown resin, which age hardens and renders exceedingly like bdellium; burnt in the flame of a candle, it emits a smell like that of Cashew-nuts while roasting; it softens in the mouth, adheres to the teeth, has a slightly bitter taste, with some degree of pungency; dissolves almost entirely in spirits, and in a great measure in water. (L.)

MELANORRHŒA. (Endl. Gen. Pl. 1132.)

MELANORRHŒA USITATISSIMUM. *Thetsee*, *Theet-see*, or *Varnish-tree*. India.

This tree extends over a wide range of country. It attains its greatest size in the valley of Kubbu, about two hundred miles distant from the sea-shore. The trees average from thirty to forty feet high, and have a circumference of from five to eleven feet, four feet above the ground. A good tree yields about ten or twelve pounds of varnish annually, and its value at Prome, on the Irrawaddy, is about tenpence per pound. It is used in enormous quantities by the natives, who are said by Dr. Wallich, never to experience the ill effects of handling it in the liquid state, which Europeans are said to do. In the fresh state it has very little pungency of taste, and is entirely devoid of smell. The natives are apt to adulterate that brought to market with sesamum oil. The Burmese style it the *Theet-see*, or *Varnish-tree*.

OMPHALOBIUM. (De Cand. ii. 85.)

OMPHALOBIUM LAMBERTII. *Connarus Guianensis*. (Lamb.) Guiana.

Yields the beautiful *zebra wood* of the cabinet-makers, according to Schomburgk.

PICRAMNIA. (Endl. Gen. Pl. 1138.)

PICRAMNIA ANTIDESMA. (Willd.) *P. triandra*, *Pseudo Brasilium*, *Brasilletto*. Jamaica and Hispaniola.

Wood used to dye red.

PISTACIA. (De Cand. ii. 64.)

PISTACIA ATLANTICA. (Desf.) Barbary.

Yields *Barbary mastich*, called *Tum*; fruit acidulous.

PISTACIA LENTISCUS. (Linn.) *Mastich-tree*. Shores of Mediterranean.

Yields by incision *Mastich*; berries yield oil; wood used in dyspeptic affections, gout, and dysentery. (G.) It is also employed to strengthen and preserve the teeth, in old obstinate gleet, diarrhœa, &c. (L.)

PISTACIA TEREBINTHUS. (Linn.) *Turpentine-tree*. Syria.

Yields by incision *Scio turpentine*; fruit styptic, pickled for eating; bark resinous, substituted for narcaphte. (G.) *Cyprus turpentine* is obtained from the trunk by incision; when pure, this is very thick, yellowish, sweet-scented, resembling lemon or fennel in some degree, with an agreeable and by no means acrid taste; follicular horn-like galls are produced on this species, which have been used, according to Clusius, in the manufacture of a sanative and glutinous balsam. The purest turpentine is obtained by crushing these young galls and filtering the juice. (O'Sh.)

PISTACIA VERA. (Linn.) *Pistacia-nut.* (Var. β.) *P. trifolia.* (Linn.)
Kernel oily, sweeter than those of almonds, forms a green emulsion, cooling; fruit eaten. (G.) Fruit commonly employed in the south of Europe at the dessert, for confectionary; it contains a considerable quantity of fixed oil, and makes a excellent emulsion for irritation of the urethra, and for other purposes. (L.)

PROTIUM. (De Cand. ii. 78.)

PROTIUM JAVANICUM. (Burm.) *Amyris protium.* (Linn.) Java.
Shells of the fruit yield an essential oil.

RHUS. (De Cand. ii. 66.)

RHUS COPALLINA. (Linn.) North America.
Has been said to yield *West Indian copal.* See *Hymenæa Courbaril* and *verrucosa.*

**RHUS CORIARIA. (Linn.) *R. obsoniorum, Common elm-leaved sumach.*
Fl. whitish green. July, August. Large shrub. Native of South of Europe.
Bark, leaves, flowers, and fruits, acidulous, very astringent; shoots and leaves imported and sold ground, for dyeing.

**RHUS COTINUS. (Linn.) *Red sumach, Venice sumach, Venus sumach.* Native of South of Europe.
Very astringent; wood, *young fustick*, yellow, dyes coffee colour, and with nitro-muriate of tin an orange colour; fruit, *Sumach berries*, astringent.

RHUS GLABRA. (Linn.) *Common Pennsylvanian sumach.*
Bark febrifuge, used in dyeing red.

RHUS JAVANICUM. (Willd.)
Berries boiled in water yield resin.

RHUS METOPIUM. (Linn.) *Hog-gum tree.* West Indies.
Yields *hog-gum.*

RHUS PERNICIOSA. (H. B. et Kunth.) North America.
RHUS PUMILA. (Michx.) North America.
Both poisonous; the latter is the most venomous of the whole genus. (L.)

RHUS RADICANS. (Linn.) North America.
Juice vesicatory.

RHUS STRIATA. (Flor. Per.) South America.
Juice of bark yields a black colour.

RHUS TOXICODENDRON. (Linn.) *Poison oak, Poison ivy.* United States.
Juice caustic, dyes linen, &c. black; raises blisters on the skin, and is poisonous taken internally; leaves, *Toxicodendron, P. U. S., Toxicodendri folia*, stimulant, narcotic, used in palsy; dose gr. ss. to gr. iv., twice or thrice a-day. (G.) Yields abundantly a yellowish, narcotic, acrid, milky juice, which becomes black when exposed to the air, and forms an indelible ink when applied to linen; this juice, and even the exhalations from the plant, are extremely poisonous to many persons,

though not to all; they bring on itching, redness, and tumefaction of the affected parts, particularly of the face, succeeded by blisters, suppuration, aggravated swelling, heat, pain, and fever, but these effects are rarely fatal; it is employed in powder, infusion, and extract, internally in certain diseases; it has been administered with success, in the dose of a tea-cup of the infusion, to consumptive and anasarcous patients; has been employed with supposed benefit in consumption, and is well spoken of in cases of herpetic eruption, palsy, mania, and paralysis. (L.)

RHUS TYPHINUM. (Linn.) *R. virginianum*, *Virginian sumach.*

Berries astringent, used in fluxes of different kinds; juice of the stem raises blisters on the skin.

RHUS VENENATA. (D. C.) *R. vernix*, *Poison tree*, *Poison ash*, *Poison sumach.* North America.

Yields by incision *Japanese varnish;* milky juice dyes linen, &c. black. (G.) The juice, or even air impregnated with the volatile principle of this plant, is to many persons a serious poison, producing severe and dangerous erysipelatous swellings. Kalm mentions a person who, by the simple exhalation, was swollen to such a degree, that he was as stiff as a log of wood, and could only be turned about in sheets; some constitutions are, however, but slightly or not at all affected by it. (L.)

SEMECARPUS. (De Cand. ii. 62.)

SEMECARPUS ANACARDIUM. (Linn.) *Anacardium orientale*, *A. latifolium*, *A. officinarum.* (Gaertn.) *Marking nut.* East Indies.

Nut, *Malacca bean*, boiled for the oil; contains a caustic, black, oily mucilage, and then a sweet white kernel, which is cephalic, and increases the memory; the mucilage is used externally in disorders of the skin; green fruit used for marking, eatable. (G.) Wood contains much acrid juice, which renders it dangerous to those who work upon it; receptacles eaten like apples when roasted; the pure black acrid juice employed externally by the natives of India to remove rheumatic pains, aches, and sprains, a little being rubbed over the parts affected, and is an efficacious remedy, except in such constitutions as are subject to inflammations and swellings; universally used to mark linen; employed by the Telinga physicians, mixed with garlic and other substances, in almost every sort of venereal complaint; bark mildly astringent. (L.)

SCHINUS. (De Cand. ii. 74.)

SCHINUS MOLLE. (Linn.) Mexico and Peru.

Yields *Peruvian mastich;* wood purgative, detersive, astringent; fruits make a kind of wine, rather acrid, soon turning into vinegar. (G.) A white odoriferous substance, resembling gum elemi, is also procured from the leaves, and, dissolved in milk, is used in diseases of the eyes; of the bark boiled in water, lotions are made for healing tumours and reducing inflammations. (L.)

SPONDIAS. (De Cand. ii. 74.)

SPONDIAS DULCIS. (Forst.) *S. citherea*, *Otaheite apple.* South America, &c.

Fruit edible, acid, cooling.

SPONDIAS ENTRA. *Hog-plum.*
Bark used externally as a fomentation in anasarca.

SPONDIAS LUTEA. (Linn.) *S. myrobalanus, Mombin.* Warm parts of America.
Yields resin; fruit acerb, acidulous, laxative.

SPONDIAS MANGIFERA. (Pers.) *S. amara.* East Indies.
Trunk when wounded yields large quantities of a mild insipid gum, exactly like gum arabic. (L.)

STAGMARIA. (L. Med. B. 286.)

STAGMARIA VERNICIFLUA. (Jack.) East Indies.
Resin copious, extremely noxious and acrid, causing excoriation and blisters when applied to the skin; the exhalations from the tree are so deleterious as to render it unsafe to remain beneath its shade; it yields one of the celebrated hard black lackers or varnishes of China. (L.)

ORDER 55.—LEGUMINOSÆ. (De Cand. ii. 93.)

Calyx of five (rarely four) sepals, more or less united at the base, and therefore five-dentate, five-cleft, or five-partite; *sepals* generally unequal, sometimes sub-equally coherent, sometimes concreted into two lips, the upper consisting of two sepals, which are either free at the apex, or entirely united; the lower of three sepals, generally distinct at the apex; *petals* five, or by abortion 4—3, 2—1, or none, generally unequal, inserted into the base of the calyx, (seldom on the torus,) generally imbricated in æstivation, (rarely valved,) almost always free, (sometimes united into a gamopetalous corolla;) *stamens* inserted with the petals, generally double their number, (seldom three or four times their number or fewer;) the *filaments* free, variously united, being either monopetalous, with the tube entire or cleft, open above, or diadelphous, nine and one, or five and five, very rarely triadelphous; *anthers* two-celled; *carpel* generally one, the others being abortive; *ovary* sessile or stipitate, free; *style* one, filiform, arising from the upper suture; *stigma* terminal or lateral; *legume* two-valved, membraneous, coriaceous, dehiscent, or indehiscent, one-celled, or, by the folding in of one of the sutures, longitudinally two-celled, or, by transverse membranes or articulations, many-celled; *seeds* one, two, or more, affixed to the upper suture, inserted alternately into each valve, generally oval or reniform; *funiculus* various, seldom expanded into an arillus; testa smooth; *endopleura* often tumid, resembling an albumen; *embryo* sometimes straight, at other times bent over the commissure of the lobes, in either case directed towards the hilum; *cotyledons* foliaceous or fleshy, the first exsert, the latter germinating within the spermoderm under ground. *Trees*, *shrubs*, or *herbs*, with alternate, bistipulate, simple, or variously compounded petiolated *leaves*.

ABRUS. (De Cand. ii. 381.)

ABRUS PRECATORIUS. (Linn.) *Glycine abrus.* India and America.
Root, *Jamaica wild liquorice*, yields an extract like liquorice, but diaphoretic, pectoral, demulcent; seeds, *Jumble beads*, sold at the china shops, ophthalmic, cephalic. (G.) The seeds have been incorrectly stated by some to be very deleterious, two or three being, according to Hermann, a mortal dose; they are, on the contrary, perfectly innocuous, and although hard and indigestible, form an article of food in Egypt. (L.)

ACACIA. (De Cand. ii. 448.)

ACACIA AMARA. (Willd.) East Indies.
Bark bitter.

ACACIA ARABICA. (Willd.) *A. nilotica.* (Delil.) *Mimosa arabica.* (Lamb.) *Barbura, Babul.* India and Arabia.

Yields *yellow gum arabic.* (G.) Bark a powerful tonic. The pods are used by the tanners of Egypt, who call them *Neb-neb.* (L.) (Said by Ehrenberg to be a mere variety of A. vera.)

ACACIA CATECHU. (Willd.) *Mimosa catechu.* East Indies.

Yields *Terra japonica.* (G.) Yields *Bengal catechu,* but, according to Dr. Pereira, of inferior quality. (L.)

ACACIA FARNESIANA. (Willd.) *Mimosa farnesiana, Vachellia f.* East and West Indies.

Bark exudes a considerable quantity of gum. Flowers distilled yield a delicious perfume. (L.)

ACACIA FERRUGINEA. (D. C.) *Mimosa ferruginea.* India.

Bark strongly astringent; added to jagghery water in India forms an intoxicating liquor. (L.)

ACACIA GIRAFFE. (Willd.) Africa.

Yields a superior gum.

ACACIA GUMMIFERA. (Willd.) Africa.

It is by no means certain that the *Sassa gum,* ascribed by some to Inga sassa, is not produced by this plant. Dr. Pereira refers *Barbary gum* to it. (L.)

ACACIA HORRIDA. (Willd.) *Doornboom.* The Cape Colony.

A large tree, which yields an inferior gum, called *Cape gum.*

ACACIA LEUCOPHLEA. (Roxb.) *Mimosa leucophlea, A. alba.* Coast of Coromandel.

Properties similar to those of A. ferruginea.

ACACIA ÖRFOTA. *Mimosa örfota.* (Forsk.) Arabia.

Leaves prevent fresh camel's milk from becoming acid for several days; fumigation with the wood and resin employed with success by the Arabs in epilepsy. (L. ex Forsk.)

ACACIA SCANDENS. (Willd.) *Mimosa scandens, Coccoon.* Brazil.

Seeds eaten.

ACACIA VERA. (Willd.) *Mimosa nilotica.* (Linn.)

From this the best *gum arabic* is said to be obtained.

The following species also yield a gum like gum arabic.

A. EHRENBERGII, A. SENEGAL, A. SEYAL, A. TORTILIS.

Several New Holland species also yield a gum like catechu, especially A. mollisima, A. decurrens, and A. melanoxylon. The extract of this bark has been exported in considerable quantity, under the name of *extract of mimosa bark,* from Van Diemen's Land. The bark itself is also brought in in large quantities. (L.)

ADENANTHERA. (De Cand. ii. 446.)

ADENANTHERA PAVONINA. (Linn.) East Indies.

Wood substituted for red sanders. It yields a deep-red dye.

AGATI. (De Cand. ii. 266.)

AGATI GRANDIFLORA. (Desv.) *Æschinomene grandiflora.* (Linn.) *Coronilla grandiflora.* (Willd.) *Sesbana grandiflora.* (Poir.) *Bastard sensitive plant.* India.

Seeds eatable; yield *Gum agati;* used in dyeing. (G.) Bark principally bitter and tonic. (L.)

ALHAGI. (De Cand. ii. 352.)

ALHAGI MAURORUM. (Tourn.) *Hedysarum alhagi.* (Linn.) *Manna hebraica, Camel's thorn. Ka-ri-shuter. Joursa.* Egypt, Syria, Persia, &c.

Yields *Persian manna.* (G.) From the branches of this plant there exudes a sweet substance of the nature of manna, the *Terengjabim* of the Arabs, which is gathered by merely shaking the branches; some writers are of opinion that this was the manna on which the children of Israel were fed in the wilderness. The *manna* is not secreted from this plant in India, Arabia, or Egypt. (L.)

ALOEXYLON. (De Cand. ii. 518.)

ALOEXYLON AGALLOCHUM. (Lour.) *Aquilaria ovata.* Cochin China.

Wood, *Aloes-wood, Calambac, Eagle-wood, Lignum aloes,* white, buried for some time becomes dark and resinous; cordial, alexiterial; used in fumigations and pastiles; *Aghilcuttay, Lignum aspalathe,* reddish, resinous, added to Sandal-wood to increase its fragrancy. (G.) This tree produces one of the two sorts of *Calambac, Eagle-wood,* or *Lign aloes,* a fragrant substance, which, Loureiro states, consists of a concretion of the oily particles into a resin in the centre of the trunk; it is brought on by some disease, and the tree in time dies of it. Of all perfumes, this is the most grateful to Oriental nations; it is stimulant, corroborant, cephalic, cardiac; the scent is used against vertigo and paralysis; the powder prevents vomiting, and stops diarrhœa by its tonic but astringent properties. Its name, *Aloe-wood,* has nothing to do with aloes, being a corruption of its Arabic name *Allowat* or *Allieh.*

ANAGYRIS. (De Cand. ii. 99.)

ANAGYRIS FŒTIDA. (Linn.) *Stinking bean trefoil.* South Europe.

Leaves emmenagogue, cephalic; seeds diuretic. (G.) Seeds said to be poisonous like those of Cytisus laburnum. (L.)

ANTHYLLIS. (De Cand. ii. 168.)

ANTHYLLIS HERMANNIÆ. (Linn.) *Cytisus græcus, Aspalathus, Spartium spinosum, Trefoil acacia.* Greece, Spain.

Roots diuretic. (L.) Yields *Italian acacia.* (G.)

*ANTHYLLIS VULNERARIA. (Linn.) *Wound-wort.*

Fl. yellow or reddish. May, August. Perennial. Dry pastures.

Has had great reputation as one of the best of styptics. (L.) Dyes yellow. (G.)

ANDIRA. (De Cand. ii. 475.)

ANDIRA INERMIS. (H. B. et Kunth.) *Geoffroya inermis.* (Swartz.) *Geoffræa inermis. Cabbage tree, Worm bark tree.* Tropical America.

Bark bitter, astringent, febrifuge, and vermifuge, in doses of ℈j. to

3j., but the dose should be less at first, and gradually increased, lest it should occasion vomiting, delirium, and fever. (G.) Bark anthelmintic, it has a disagreeable smell, and a sweet mucilaginous taste; its effects are drastic, emetic, purgative, and narcotic; poisonous in large doses, producing violent vomiting, fever, and delirium. (L.)

ANDIRA RETUSA. (H. B. et Kunth.) Cayenne.
Has similar properties to the preceding.

APIOS. (De Cand. ii. 390.)

APIOS TUBEROSA. (Mönch.) *Glycine apios.* (Linn.) North America.
Root farinaceous.

ARACHIS. (De Cand. ii. 474.)

ARACHIS HYPOGÆA. *Munduli.* America and Africa.
Seeds, *Earth peas*, *Pindars*, *Ground nuts*, nourishing, yield oil, made into chocolate; root sweet. (G.) The pods, as they increase in size, force themselves under ground, where the seeds are ripened; hence the name as above, or *under-ground kidney bean.*

ASTROLOBIUM. (De Cand. ii. 311.)

ASTROLOBIUM SCORPIOIDES. (D.C.) *Ornithopus scorpioides.* (Linn.) *Scorpioides*, *Scorpion-wort.* South of France, Italy, and Spain.
Herb stimulant, applied externally to bites of venomous animals. (G.) Leaves vesicant. (L.)

ASTRAGALUS. (De Cand. ii. 281.)

ASTRAGALUS CRETICUS. (Lamb.) Crete.

ASTRAGALUS GUMMIFER. (Labill.) On Lebanon.
Exude *Gum tragacanth.* (G.) A. Creticus is said by Martius to produce the sort of tragacanth that is received in the form of threads or slender strips; that produced by A. gummifer also is inferior in quality, while A. tragacantha is said by De Candolle to yield no tragacanth. (L.)

*ASTRAGALUS GLYCYPHYLLOS. (Linn.) (E. B. 203.) *Liquorice vetch*, *Sweet milk vetch*, *Wild liquorice.*
Fl. dingy yellow. July. Perennial. Woods and thickets.
Root sweet, used for liquorice; leaves used in retention of urine.

ASTRAGALUS SYRIACUS. (Linn.) *Astragalus*, *Milk vetch.* Syria.
Root astringent, diuretic.

ASTRAGALUS VERUS. (Oliv.) Persia.
The principal part of the *Tragacanth* used in Europe is said by Olivier to be yielded by this plant; Martius also ascribes the *Cake tragacanth* to it. (L.)

BAPHIA. (De Cand. ii. 424.)

BAPHIA NITIDA. (Lodd.) Sierra Leone.
Yields the red dye-wood, known under the name of *Cam-wood.*

BAPTISIA. (De Cand. ii. 100.)

BAPTISIA TINCTORIA. (R. Brown.) *Podalyria tinctoria.* (Sims.) United States.
Root dyes black. (G.) Yields *indigo* of indifferent quality; roots and herbage antiseptic, sub-astringent, cathartic, and emetic. (L.)

BAUHINIA. (De Cand. ii. 512.)

BAUHINIA TOMENTOSA. (Linn.) India.

Dried buds and young flowers prescribed in dysentery in India. (L.) The leaves of several species of Bauhinia are employed in Brazil under the name of *Uṇha de boy*, or *Oxhoof*, as mucilaginous remedies. (L. *ex* Martius.)

BOWDICHIA. (De Cand. ii. 519.)

BOWDICHIA VIRGILIOIDES. (H. B. et Kunth.) South America.

Said by Humboldt to produce *Alcornoco bark.*

BURTONIA. (De Cand. ii. 106.)

A poisonous leguminous plant, which has proved very destructive to sheep and cattle belonging to settlers on the Swan River, New South Wales; has been said to belong to this genus or that of Gompholobium.

BUTEA. (De Cand. ii. 414.)

BUTEA FRONDOSA. (Roxb.) *Erythrina monosperma.* (Lam.) India.

Yields by incision, *Gummi rubrum astringens.* (G.) The juice, which exudes naturally from cracks and wounds in the bark, hardens into a most beautiful ruby-coloured astringent gum, which dissolves perfectly in water, and partially in spirit; infusions of the flowers dye cotton cloth previously impregnated with a solution of alum, of a beautiful bright yellow; a little alkali changes it into a deep yellow orange; lac insects are frequent on the small branches and petioles. Guibourt considers that this plant produces the *Cachou en masse*, or *Cachou lucide;* but Dr. Pereira doubts it. (L.) Furnishes *Palass goond*, or *Bengal kino*, a powerful astringent, used in chronic diarrhœa. As an external astringent application it is quite unrivalled. Flowers give a fine yellow dye. (O'Sh.)

BUTEA SUPERBA. (Roxb.) India.

Properties the same as the preceding plant. (L.)

CÆSALPINIA. (De Cand. ii. 481.)

CÆSALPINIA BAHAMENSIS. *Braziletto.* Imported from New Providence; yields a dye.

CÆSALPINIA BRASILIENSIS. (Linn.) *Brasiletto.* West Indies, and Forests of Brazil.

Wood, *Brazil-wood* of commerce, according to Lindley; used to dye red; gives a deep colour to water.

CÆSALPINIA CORIARIA. (Willd.) *Poinciana coriaria.* (Jacq.) South America.

Pods, *Libidibi*, or *Dividivi*, used in tanning.

CÆSALPINIA CRISTA. (Linn.) South America.

Wood, *Brazil wood, Lignum brasiliense*, very hard, sinks in water, pale when fresh cut, but turns nearly black by exposure to the air; used to dye red, and for ink. (G.)

CÆSALPINIA ECHINATA. (Lamb.) *Guilandina echinata.* (Spreng.) South America.

Wood, *Pernambuco wood*, or *Brazil wood*, of best quality, hard, compact; pale-red or yellowish, becomes brownish-red on exposure to the air. Inodorous and almost insipid; scarcely colours cold water, affords a pale-reddish decoction with water, and a darker tincture with spirit. Used for dyeing.

CÆSALPINIA NUGA. (Ait.) *Guilandina nuga.* Moluccas.
A decoction of the roots used, according to Rumph, in calculous and nephritic complaints. (L.)

CÆSALPINIA SAPPAN. (Linn.) *Guilandina sappan.* East Indies.
Wood, *Chappungham sappan*, or *Bukkum-wood*, *Bois d'Inde*, *Brisellet des Indes;* used to dye red.

CÆSALPINIA BIJUGA. (Swartz.) *C. vesicaria.* (Linn.) *Poinciana bijuga.* (Linn.) Jamaica.
Wood, *Bastard nicaragua wood*, brown, dyes red.
Nicaragua wood, or *Peach wood. St. Martha wood. California wood. Terra Firma wood*, and *Sappan wood* are inferior kinds of *Brazil wood*, supposed to be obtained from different species of Cæsalpinia. According to Guibourt, the *St. Martha wood* is probably the production of *C. Brasiliensis.*

CARAGANA. (De Cand. ii. 268.)

CARAGANA ARBORESCENS. (Lamb.) *Robinia caragana.* (Linn.) Siberia.
Seeds oleaginous, eatable.

CASSIA. (De Cand. ii. 489.)

CASSIA ABSUS. (Linn.) Egypt and Ceylon.
Leaves, reverse ovate, two awl-shaped glands at the base of the petiole; mixed with those of C. acutifolia; seeds, *Tschischim seminæ*, applied with sugar to the eyes in the Egyptian ophthalmia. (De Cand.)

CASSIA ACUTIFOLIA. (Delile.) *C. senna.* (Lindl.) *Cassia medica.* (Forsk.) *C. orientalis.* Upper Egypt and Nubia.
Leaves, *Senna Alexandrina*, *Alexandrian senna.* This plant furnishes the principal part of the senna consumed in this country, and when unadulterated, it is one of the best of all purgatives, but is very much mixed—in some samples it is said to the extent of twenty per cent.—with leaves of Tephrosia apollinea and Cynanchum argel, and it is even reported to be mixed with Coriaria myrtifolia; these adulterations are, however, easily detected by any careful observer. The leaves of T. apollinea are obovate, almost wedge-shaped; those of Cynanchum argel thick, veinless, longer, downy or smooth; and of Coriaria ribbed. (L.)

CASSIA ÆTHIOPICA. (Guib.) *C. ovata.* (Merat.) *Sene de Nubia.* Nubia.
This furnishes exclusively the *Senna of Tripoli*, which, according to Guibourt, is extremely uniform in its appearance. (L.) Leaves, *Tripoli senna*, *Senna Tripolitana*, large, blunt, rough, darkish green. (G.)

CASSIA ALATA. (Linn.) *C. herpetica.* (Jacq.) *Ringworm bush.* Warm parts of America. India.

Flowers used to cure tetters; bruised leaves and expressed juice, used against itch, tetters, and ringworm. (G.) The Telinga and Tamul physicians say that this plant cures all poisonous bites and venereal outbreakings, and also strengthens the body; fresh leaves often employed to cure ringworm. (L.)

CASSIA BRASILIANA. (Lamb.) *C. mollis* (Vahl.) *C. javanica.* Brazil.

Pods, *Horse cassia*, or *Brazilian cassia*, sometimes substituted for *Cassia fistula.*

Pulp purgative, bitter.

CASSIA CHAMÆCRISTA. (Linn.) *Cassia putchella.* (Sal.) *Canepiece sensitive plant.* West Indies.

Used against the poison of the nightshade.

CASSIA ELONGATA. (Lémaire Lisanc.) *C. Lanceolata.* (Royle.) India.

The dried leaves form the finest senna of commerce, known by the name of *Tinevelly senna.* (L.)

CASSIA EMARGINATA. (Linn.) *West India senna.* West Indies.

Pulp of the pods laxative; leaves purgative, used as senna.

CASSIA FISTULA. (Linn.) *Cathartocarpus fistula.* (Pers.) *Bactyrilobium fistula.* (Willd.) *Cassia stick tree.* East Indies, &c.

Fruit; *Cassia fistula*, two feet long, size of the thumb, imported from the West Indies; pulp purgative, cooling; an extract of the pulp gently laxative; seeds in the dose of 4—6 drachms purgative; roots reputed an excellent febrifuge. (L.)

CASSIA LANCEOLATA. (Forsk.) *Cassia orientalis.* (Pers.) Arabia.

Leaves, *Mocho senna*, *Mecca senna*, *Senna Arabica*, very long, lanceolate, equal-sided, smell weak. (G.) Forskahl asserts that this is the true senna of Mecca, and not C. elongata, as supposed by some. (L.) It must be here remarked, that the C. lanceolata of D. C. appears to be the same as C. acutifolia, and not the true lanceolata.

CASSIA MARYLANDICA. (Linn.) *American senna. Wild senna.* North America.

Leaves purgative. (G.) Nearly resembles senna in its properties; according to Bigelow about one-third more of the leaves of this plant than of true senna is required to produce a given effect. (L.)

CASSIA MEDICA. (Velloz.) Brazil.

Root called *Febra-fuge;* used instead of cinchona. (L.)

CASSIA OBOVATA. (Coll.) *Cassia senna.* (Nectoux.) *Cassia senna Italica.* (Linn.) India, Africa, &c.

The leaves of this furnish the inferior senna, known by the name of *Aleppo* and *Italian senna.* (L.)

CASSIA OCCIDENTALIS. (Linn.) *Jamaica piss-a-bed, Stinking weed.* West Indies.

Expressed juice useful in eruptions; root diuretic. (G.) The root greatly stimulates the lymphatic system, and is, therefore, very beneficial in obstructions and weakness of the stomach and also inci-

pient dropsy, against which disease it is used as a diuretic. (L. ex Martius.)

CASSIA SENNA.

Leaves, *Italian senna*, *Coromandel senna*, *Country senna*; nearly ovate, petiole not glandular; more numerous and less active than the Alexandrian; used in the East Indies for senna.

CASSIA TORA. (Linn.) *C. obtusifolia*, *Senna tora.* Arabia.

Leaves used to adulterate C. obovata, to which it bears a good deal of resemblance; it may, however, be readily known by its leaflets never being in more than three pairs, by their distinctly cuneate form and ciliated margin, by the gland between the lowest pair, and especially by the pods, which are long, slender, and quadrangular, instead of being flat and falcate. (L.)

CERATONIA. (De Cand. ii. 486.)

CERATONIA SILIQUA. (Linn.) *Caroba ceratia*, *Siliqua dulcis.* (C. Bauh.) *Carob tree*, *St. John's bread.* Africa, East Indies.

Pods used as food for man and beast, and by singers to improve the voice. They have been imported from Spain under the name of *Algaroba beans*, the tree being known in that country by the name of Algaroba. There is, however, another tree, the *Prosopis pallida*, a native of Chili, which is called Algaroba.

CERCIS. (De Cand. ii. 518.)

CERCIS SILIQUASTRUM. (Linn.) *Siliquastrum orbiculatum.* (Mönch.) *Judas tree.* South Europe.

Flowers piquant, antiscorbutic in salads. (G.)

CICER. (De Cand. ii. 354.)

CICER ARIETINUM. (Linn.) *Cicer*, *Chick pea.* South Europe.

Seeds, *Calavanches*, *Bhoot*, *Horse grain*, heavy but wholesome; roasted for coffee; farina resolvent. (G.)

CLITORIA. (De Cand. ii. 233.)

CLITORIA TERNATEA. (Linn.) *Ternatea vulgaris.* (H. B. et Kunth.) *Lathyrus spectabilis.* (Forsk.) *Clitoria spectabilis.* (Sal.) East Indies.

Root emetic. (a.)

COLUTEA. (De Cand. ii. 270.)

**COLUTEA ARBORESCENS. (Linn.) *Colutea hirsuta.* (Roth.) *C. arborescens.* (Burm.) *Bladder senna.*

Fl. yellow. June, August. Large shrub. Native of South Europe. Leaves and pods purgative; used for adulterating senna. (G. L.)

COLUTEA CRUENTA. (Ait.) *C. orientalis.* (Lamb.) South Europe. Has similar properties.

COPAIFERA. (De Cand. ii. 508.)

COPAIFERA CORIACEA. (Mart.) Province of St. Paul, Brazil.

COPAIFERA LANGSDORFII. (Desf.) Province of St. Paul, Brazil.

Copaiva balsam is furnished by these according to Spix and Martius.

COPAIFERA MULTIJUGA. (Hayne.) Para.

According to Hayne this yields the copaiva exported from Para. The *balsam of copaiva*, an acrid, bitter, nauseous, liquid resin, with stimulant, diuretic, and cathartic properties, is apparently furnished by all the species of this genus. Hayne, however, discontinues the name of C. officinalis, which appears to have been given indiscriminately to many different species. (L.)

COPAIFERA OFFICINALIS. (Linn.) *C. Jacquini.* (Spreng.) West Indies.

From this is obtained the *Copaiva balsam* of the West Indies. (L.)

CORONILLA. (De Cand. ii. 309.)

**CORONILLA EMERUS. (Linn.) *Coronilla*, or *Scorpion senna.*

Fl. yellow. April, June. Large shrub. Native of South Europe.

Leaves purgative, used instead of senna by the country people. (G.) Leaves cathartic, like those of senna, but less active. (L.)

CORONILLA JUNCEA. (Linn.) *Polygala vera, Milk vetch.* South France.

Herb in decoction increases the milk.

CORONILLA SECURIDACA. (Willd.) *Securidaca.*

Seed extremely bitter, purgative. (G.)

CORONILLA VARIA. (Linn.) South Europe, Crimea.

Juice emetic. (G.) Leaves diuretic and cathartic; juice said to be even poisonous. (L.)

CROTOLARIA. (De Cand. ii. 125.)

CROTOLARIA JUNCEA. (Linn.) Coimbatore.

This plant yields the fibre known as *Sunn, Janapam*, and *Indian hemp.*

CYTISUS. (De Cand. ii. 153.)

CYTISUS CAJAN. (Willd.)

Seeds, *Pigeon peas, Angola pea, Orror*, used as food, strong tasted; young shoots pectoral; root aromatic. (G.)

CYTISUS HIRSUTUS. (Linn.) *Pseudo cytisus, Hairy shrub trefoil.* South Europe.

Leaves cooling, diuretic.

**CYTISUS LABURNUM. (Linn.) *Cytisus alpinus.* (Lamb.) *Common laburnum.*

Fl. yellow. May, June. Tree. Native of lower range of Alps.

Leaves diuretic, resolvent. (G.) Seeds highly poisonous, possessing narcotico-acrid properties, supposed to be owing to the presence of an active principle called cytisin. (L.) Bark also poisonous.

CYTISUS SCOPARIUS. (Link.) (E. B. 1339.) *Genista scoparia.* (Lamb.) *Spartium scoparium.* (Linn.) *Common broom.*

Fl. yellow. June. Shrub. Dry hills.

Decoction of the young tops diuretic and cathartic; seeds said to be emetic; Mead and Cullen found them useful in dropsy. (L.) Tops, *Spartii cacumina*, diuretic, even to animals, who browse on them;

flowers used as a pickle for the table; seeds emetic, cathartic, roasted and used as coffee. (G.)

DALEA. (De Cand. ii. 245.)

DALEA ENNEAPHYLLA. (Willd.) *Psoralea enneaphylla.* (Linn.) *P. Carthagenensis.* (Jacq.) Carthagena.
Dyes yellow. (G.)

DERRIS. (De Cand. ii. 415.)

DERRIS PINNATA. (Lour.) Cochin China.
Root used for areca nut.

DIPTERIX. (De Cand. ii. 477.)

DIPTERIX ODORATA. (Willd.) *Baryosma tonga, Coumarouma odorata.* Guiana.
Kernel, *Tonca bean*, odoriferous; used to scent snuff; contains *Coumarine*, which exudes between the lobes.

DOLICHOS. (De Cand. ii. 396.)

DOLICHOS BIFLORUS. (Linn.) *Coolthi.* East Indies.

DOLICHOS BULBOSUS. (Willd.)
Seeds eaten.

DOLICHOS CATIANG. (Linn.) *Barbaty.* East Indies.
Seeds used to make soy; eaten in soup.

DOLICHOS SINENSIS. (Linn.) *D. Cylindricus.* (Mönch.) China.
Seeds eaten.

DOLICHOS TUBEROSUS. (Lamb.) Martinico.
Roots eatable.

DORYCNIUM. (De Cand. ii. 208.)

DORYCNIUM HIRSUTUM. (Ser. MSS.) *Lotus hirsutus.* (Linn.) *Trifolium hæmorrhoidale, Pile lotus.* South of Europe.

DORYCNIUM SUFFRUTICOSUM. (Vill.) *Lotus dorycnium.* (Linn.) *White lotus.* South of Europe.
Seeds useful in piles.

ERVUM. (De Cand. i. 366.)

ERVUM ERVILIA. (Linn.) *Vicia ervilia.* (Willd.) *Ervilia sativa.* (Link.) *Bitter vetch.* South of Europe.
Farina maturative and resolvent. (G.) Seeds poisonous; mixed with flour and made into bread, they produce weakness of the extremities, especially of the limbs; horses become almost paralytic. (L.)

ERVUM LENS. (Linn.) *Lens esculenta.* (Mönch.) Germany.
Seeds *lentil*, *lens vulgaris*, *massoor*, difficult of digestion, astringent, hurtful to the eyes. (G.)

ERYTHROPHYLLUM. (Endl. Gen. Pl. 1323.)

ERYTHROPHYLLUM. Sp. incert. (Afzel.) *Sassy bark, Saucy bark, Ordeal bark, Doom bark, Cassa bark.* Africa.
Used by the natives, as a means of determining the guilt or innocence of persons accused of crimes; for this purpose a strong infusion of the bark is administered, or the bark itself is chewed, and it is stated to

have an instant and convulsive operation as a most violent emetic and purge. If the poison remains on the stomach, and the party dies, he is considered guilty; if, on the other hand, he is relieved by vomiting, he is deemed innocent. The tree that yields it does not appear, as yet, to be satisfactorily determined. It is probably a leguminous tree, and contains much tannin.

FABA. (De Cand. ii. 354.)

**FABA VULGARIS. (Mönch.) *Vicia faba.* (Linn.)

Fl. white, with a black silky spot in the wings. June, July. Annual. Native of borders of Caspian.

Seeds, *Garden bean*, *Faba major*, nourishing, difficult of digestion, flatulent. *Vicia faba* β. Seeds, *Horse bean*, *Faba minor*, *F. equina*, nourishing, roasted for coffee.

GALEGA. (De Cand. ii. 248.)

GALEGA OFFICINALIS. (Linn.) *Ruta capraria.* (Gesner.) *Goats' rue*, South of Europe.

Sudorific, vermifuge, alexiterial, useful in epilepsy and convulsions. (G.)

GENISTA. (De Cand. ii. 145.)

GENISTA CANARIENSIS. (Linn.) *Canary rosewood.* Canary islands, Spain.

Root, *Lignum rhodium*, yellowish, with red veins; has the scent of roses, used for fumigation, is cordial and cephalic; yields *oil of rhodium* by distillation.

GENISTA OVATA. (Waldst.) South of Europe.

Used to dye yellow.

GENISTA PURGANS. (Linn.) *Spartium purgans.* France.

Leaves and seeds purgative.

*GENISTA TINCTORIA. (Linn.) (E. B. 208.) *Genista inermis.* (Hall. Goett.) *Spartium tinctorium.* (Roth.) *Dyer's broom*, *Dyer's greenweed*, *Wood waxen*, *Sereque.*

Fl. yellow. July. Small shrub. Pastures and thickets.

Flowers and leaves aperitive, diuretic, used to die yellow. (G.) Chiefly employed in dyeing; the whole plant affords a good yellow colour, and with woad a good green. Ray says the milk of cows feeding upon it is rendered bitter, which flavour is communicated to butter and cheese. (L. ex Smith.)

GLEDITSCHIA. (De Cand. ii. 479.)

GLEDITSCHIA TRIACANTHOS. (Linn.) *Triple-thorned acacia.* Virginia and Carolina.

Seeds used to feed animals; sap yields sugar. (G.)

GLYCYRRHIZA. (De Cand. ii. 247.)

GLYCYRRHIZA ECHINATA. (Linn.) *Prickly liquorice.* Apulia.

Root sweet, juice used in tetters and ringworms.

**GLYCYRRHIZA GLABRA. (Linn.) *Glycyrrhiza lævis.* (Pall.) *Liquiritia officinalis.* (Mönch.) *Liquiritia officinalis*, *Liquorice.*

Fl. pale blue. June, September. Perennial. South of Europe.

Root, *Stick liquorice*, *Liquoritia*, *Glycyrrhizæ radix*, sweet, opening, expectorant, pectoral, diuretic; chewed, it extinguishes thirst: its infusion covers the taste of unpalatable drugs more effectually than sugar. (G.) The roots abound in a saccharine mucilaginous matter, which is slightly bitter, and readily soluble in water; a powder and the well-known common extract are prepared from it; the decoction in different forms is a common remedy for coughs, and hectic or phthisical cases. (L.)

GOMPHOLOBIUM. (De Cand. ii. 105.)

According to Mr. James Drummond the destruction done to the flocks of sheep on the Swan River was occasioned by their cropping a leguminous plant belonging to this genus. Others have ascribed it to a Burtonia, which see.

GUILANDINA. (De Cand. ii. 480.)

GUILANDINA BONDUC. (Ait.) *Yellow nickar-tree.* East and West Indies.

Nuts, *Yellow nickars*, astringent, used in gonorrhœa, yaws, and convulsions. (G.) The seeds in powder are a powerful tonic. (L.)

GUILANDINA BONDUCCELLA. (Linn.) *Grey nickar-tree.* A variety of the preceding.

Nuts pressed for oil.

HÆMATOXYLON. (De Cand. ii. 485.)

HÆMATOXYLON CAMPEACHIANUM. (Linn.) *Logwood.* Campeachy.

Exudes a gum; wood, *Lignum Campeachense*, *Hæmatoxyli lignum*, in large logs without any bark, solid, inside pale-reddish brown, sweetish, astringent, used to dye red or purple. (G.) Chiefly used by dyers; it is a powerful astringent, and may be employed as a substitute for kino, catechu, &c. In diarrhœa and dysentery the decoction is used with benefit. (L.)

HIPPOCREPIS. (De Cand. ii. 312.)

*HIPPOCREPIS COMOSA. (Linn.) (E. B. 31.) *Ferrum equinum comosum*, *Tufted horse-shoe vetch.*

Fl. yellow. July. Perennial. Chalky pastures.

Leaves purgative; used by the country people instead of senna. (G.)

HYMENÆA. (De Cand. ii. 511.)

HYMENÆA COURBARIL. (Linn.) *Courbaril bifolia.* (Plum.) *Arbor siliquosa ex qua gummi anime elicitur.* (C. Bauh.) *Jetaiba.* (Pis.) *Jataba.* *Lotus courbaril*, *Locust-tree.* Tropical parts of America.

Exudes *Gum anime;* pods contain an acidulous nutritive farina. (G.) The mealy substance, or farinaceous pulp, in which the seeds are embedded, is sweet and pleasant, but apt to purge when recently gathered; it loses this property when it becomes old; a decoction of the pulp, allowed to ferment, forms an intoxicating drink resembling beer; a fine transparent resin of a yellowish or red colour exudes from wounds in the bark, and from between the principal roots; it is the *Gum anime*, or *Anime resin*, of the shops; it burns readily, emitting a fra-

grant smell, and has been employed by way of fumigation in attacks of spasmodic asthma, and other embarrassments of respiration. In solution, it is given internally in doses of a tea-spoonful, as a substitute for gum guaiacum, and employed externally as an embrocation. (Hamilton.) The resin called *Jatahy*, *Jatchy*, or *Copal*, and in Minas Geraës, *Jatoba*, is used, not only for various kinds of varnish, but also against tedious coughs, weakness of the lungs, spitting of blood, and incipient phthisis pulmonalis; the Caradores have a method of mixing it with sugar and rum, so as to make a very agreeable emulsion, or syrup. (Martius.) A decoction of the inner bark is said to act as a vermifuge. (Macfadyen.)

HYMENÆA VERRUCOSA. (Mart.) *Trachylobium Gärtnerianum.* (Hayne.) *Taurouk-rouchi.* Madagascar.

Forests of this tree, in Madagascar, yield large quantities of a transparent resin, which is known in this country by the name of *Copal.*

There is much confusion in the accounts given by authors of the sources of this resin, and that called *Anime.* The name *Copal* is said to be of Mexican derivation, while *Anime* is an Indian name; yet the resin brought from America is called *Anime* in commerce, and that brought from India is called *Copal.* Both kinds have many characters in common, and there is reason to suppose that they are, as above represented, both produced by the same genus of plants.

INDIGOFERA. (De Cand. ii. 221.)

INDIGOFERA ANIL. (Linn.) West Indies.

Yields much of the *Indigo* of the West Indies; powdered leaf used in hepatitis. (L.)

INDIGOFERA ARGENTEA. (Linn.) *Indigofera articulata.* (Gow.) *I. glauca.* (Lamb.) *I. tinctoria.* (Forsk.) Egypt.

Cultivated for indigo in Egypt.

INDIGOFERA CÆRULEA. India.

Said by Roxburgh to produce the finest indigo he knew. (L.)

INDIGOFERA ENNEAPHYLLA. India.

Expressed juice given as an alterative by the native physicans in old syphilitic diseases. (O'Sh.)

INDIGOFERA TINCTORIA. (Linn.) *Indigo plant.* East and West Indies.

Yields *Indigo.* (G.) A decoction of the root effectually destroys vermin; the juice of the young branches mixed with honey is recommended for aphthæ of the mouth in children, and indigo in powder is sprinkled on foul ulcers to cleanse them; the disease in poultry known by the name of yaws is cured by the application of a solution of indigo by means of a rag; indigo is also used in epilepsy and erysipelas; the valuable dye obtained from it is a highly-dangerous vegetable poison; the other species are equally important in regard to their dyeing qualities. (L.) Disagreeable and even alarming symptoms have sometimes occurred on commencing the administration of indigo, but these frequently subside, and it is then given in large doses. Dr. Pereira mentions its being given to the extent of half an ounce or an ounce daily; and Mr. Ince, of the house of Godfrey and Cooke, says,

that a delicate lady took fifteen troy pounds of indigo within twelve months, made up in five-grain pills.

INGA. (De Cand. ii. 432.)

INGA BURGONI. (D.C.) *Mimosa fagifolia.* (Linn.) *I. fagifolia.* Guiana and West India Islands.

Seed purgative, but eaten. (G.) Bark acrid and astringent. (L.)

INGA MARTHÆ. (Spreng.) Santa Martha, New Carthagena.

This is said to yield the astringent substance called *Algarovilla*, consisting of bruised pods, agglutinated more or less by the extractive exudation of the husks. These pods possess more than four times the power of good oak bark in the tanning of leather. They have also been ascribed to *Prosopis pallida.* (Ure.)

INGA SAPONARIA. (Willd.) Molucca and Cochin China.

Bark makes a kind of soap. (G.)

INGA SASSA. (Willd.) Abyssinia.

According to Bruce, this tree exudes gum in such quantity as to appear deformed by the size of the concretions; Guibourt says he met with a case of it called Gum tragacanth, and he reckons it among the false tragacanths. (L.)

INGA UNGUIS CATI. (Willd.) *Mimosa unguis cati.* (Linn.) *Cat's claw.* West Indies.

In decoction diuretic. (G.) A decoction of the bark is very astringent, has the reputation of acting as a diuretic, and has been employed externally as a lotion and injection in cases of relaxation of the parts. (L.)

LABLAB. (De Cand. ii. 401.)

LABLAB VULGARIS. (Savi.) *Dolichos lablab.* (Linn.) *Black Egyptian bean.*

Seeds nutritive.

LATHYRUS. (De Cand. ii. 369.)

*LATHYRUS APHACA. (Linn.) (E. B. 1167.) *Yellow vetchling.*

Fl. yellow. June, August. Annual. Borders of sandy and gravelly fields. Rare.

Seeds narcotic, producing excessive headache if eaten abundantly in the ripe state; young and tender, they are served sometimes at table like green peas, and then are harmless. (L.)

LATHYRUS CICERA. (Linn.) Spain.

Flour, with which the seeds have been ground up, is poisonous. (L.)

LATHYRUS SATIVUS. (Linn.) *Chick-pea, Keesari.* Spain.

Seeds nutritive.

LATHYRUS TUBEROSUS. (Linn.) *Tuberous vetch.* Various parts of Europe.

Root tuberous, sweet, yields fecula; sold for salep roots. (G.)

LOTUS. (De Cand. ii. 209.)

*LOTUS CORNICULATUS. (Linn.) (E. B. 2090.) *Common bird's foot trefoil. Yellow lotus.*

Fl. yellow. July, August. Perennial. Pastures.
Anodyne, emollient, used in burns; petals turn green in drying.

LUPINUS. (De Cand. ii. 406.)

**LUPINUS ALBUS. (Linn.) *Lupinus sativus.* (Gater.) *White lupine.*
Fl. white. July, August. Annual. Native of Asia.
Seeds rather bitter, emmenagogue, vermifuge, used as food, and externally in resolvent poultices.

LUPINUS VARIUS. (Linn.) *L. sylvestris.* (Lamb.) *Wild lupine.* Spain.
Seeds bitterish, but nutritive.

MEDICAGO. (De Cand. ii. 171.)

*MEDICAGO CIRCINATA. (Linn.) *Anthyllis, Sea kidney vetch.* South of Europe.
Herb used in dysury.

*MEDICAGO LUPULINA. (Linn.) (E. B. 971.) *Trifolium luteum minimum, Black medick* or *nonsuch, Little yellow trefoil, Melilot trefoil.*
Fl. small yellow. May, August. Annual. Waste ground.
Herb lenifying.

*MEDICAGO SATIVA. (Linn.) (E. B. 1749.) *Lucerne.*
Fl. purple. June, July. Perennial. On chalky soils.
Seeds dye yellow.

MELILOTUS. (De Cand. ii. 186.)

MELILOTUS CÆRULEA. (P. S.) *Blue melilot.* Germany.
Properties similar to those of M. officinalis.

MELILOTUS ITALICA. (Lamb.) *M. vera, Trifolium melilotus Italica, Italian melilot.* Italy.
Herb suppurative.

*MELILOTUS OFFICINALIS. (Willd.) (E. B. 1340.) *Trifolium melilotus officinalis.* (Linn.) *Yellow melilot.*
Fl. yellow. June, July. Annual. Bushy places.
Herb pectoral, discussive, causes the peculiar flavour of the Schabziger or scraped cheese of Germany. (G.) Decoction emollient, and occasionally employed in lotions and enemas; the odoriferous principle very fugacious; it was asserted by Vogel to be benzoic acid, but according to Guibourt and others it is *Coumarine*, the aromatic principle of the Tonka-bean. (L.)

MIMOSA. (De Cand. ii. 425.)

MIMOSA FEROX.
Seeds purgative, but eaten.

MIMOSA NATANS.
Eaten as a salad herb.

MORINGA. (De Cand. ii. 478.)

MORINGA APTERA. (Gaertn.) Egypt, East Indies.

From the seed is obtained by pressure the *Oil of Ben*, much used by perfumers as the basis of various scents, and by watchmakers because it does not readily freeze; the seeds are acrid, and have been employed in fevers, and also as rubefacients. (L.) Said also to be purgative and emetic in small quantities. (O'Sh.)

MORINGA PTERYGOSPERMA. (Gaertn.) *Guilandina moringa.* (Linn.) *Hyperanthera moringa.* (Vahl.) *M. oleifera, M. zeylanica, Mouringon, Smooth bonduc-tree.* East Indies.

Root, *Mouringhy root, East Indian country horseradish*, acrid, used as a sauce; wood, *Lignum nephriticum*, diuretic, used for dyeing blue; nuts, *Ben nuts, Pois queniques, Nuces behen, Balanus myrepsica, Glans unguentaria*, yield oil by pressure; pods, leaves, and flowers eaten as pot-herbs. (G.) Leaves, flowers, and seed-vessels used in curries. Roots similar in flavour to horseradish, and have the same properties; employed when bruised as an external irritant; oil of the seeds possesses the same qualities as that of the first species, said by Royle to be aperient; much used by the natives as an unguent in gout and rheumatism. Seeds used internally for their pungent and stimulating virtues. (O'Sh.) Green root employed as a stimulant in paralysis, and in intermittents, in scruple doses, also in epilepsy and hysteria. In Jamaica the wood is employed for dyeing a blue colour. (Ainslie.)

MUCUNA. (De Cand. ii. 404.)

MUCUNA PRURIENS. (D. C.) *Dolichos pruriens.* (Linn.) West Indies.

Pods, *Siliqua hirsuta*, eaten when young, imported from the West Indies; closely covered with strong, brown, stinging hairs; *Cowhage, Dolichi pubes*, occasions violent itching, which is allayed by a solution of green vitriol or oil; vermifuge by scraping the hair off a pod and taking it with treacle or syrup for a morning dose, and giving a brisk purge after two or three doses of the cowhage; root in decoction diuretic, and very useful in dropsy. (G.)

MUCUNA PRURITA. (L.) (Hook.) East Indies.

Pod covered with white, erect, stinging hairs, which are brown when ripe, and turn black in drying; they are used as a mechanical anthelmintic, and together with the former species constitute the substance called *Cowhage*, or *Cowitch*. (L.)

MYROSPERMUM. (De Cand. ii. 94.)

MYROSPERMUM PERUIFERUM. (D. C.) *M. pedicellatum.* (Lamark.) *Myroxylon pedicellatum.* (Lamb.) *Myroxylon peruiferum.* (Linn.) *Original Jesuit's bark-tree, Kina kina, Quinquino.* Forests of Peru.

The first kind of *Peruvian bark* brought to Europe; speckled on the outside, resinous when held to the sun, odoriferous, not so bitter or astringent as the present sort from the Loxa-tree; yields a resin. (G.) The stem yields the fragrant, bitter, aromatic balsam called *Balsam of Peru*, having stimulant, tonic, expectorant properties, employed in palsy, chronic asthma, gleet, leucorrhœa, &c.; applied externally in the form of plaster, it mitigates headache and toothache; the balsam

closes recent wounds. (L.) Some doubt has existed with regard to the species of Myrospermum yielding *Balsam of Peru*. Specimens of the plant were received by Dr. Pereira from Central America, and have been described by him under the designation of Myrospermum of *Sonsonate*. From the account derived from the same source, it appears that the tree yielding the balsam grows in the state of Saint Salvador, upon the Pacific coast, and that the balsam is collected within a small district, called the Balsam Coast, extending from Acajutla to Port Libertad. The *Black Balsam*, or *Balsam of Peru*, is obtained by making incisions into the bark, which is slightly burned to cause the juice to flow. A substance, called *White Balsam*, is obtained by expression from the fruit. A tincture, or essence, called *Balsamito*, is prepared by digesting the fruit in spirit.

MYROSPERMUM TOLUIFERUM. (Ach.) *Myroxylon toluifera.* (H. B. et Kunth.) *Toluifera balsamum.* (Mill.) Carthagena, and especially the neighbourhood of Tolu.

The warm, sweet, fragrant, solid, stimulant balsam, called *Balsam of Tolu*, is obtained from this tree, by making incisions into the trunk, from which the juice exudes; it is used in coughs and chronic pulmonary complaints, and is preferred to the preceding on account of its flavour.

ONOBRYCHIS. (De Cand. ii. 344.)

*ONOBRYCHIS SATIVA. (Lamb.) (E. B. 96.) *Hedysarum onobrychis.* (Linn.) *Saintfoin cockshead.*

Fl. crimson. June, July. Perennial. Dry places in a chalky soil.

Herb ripening, discussive, useful in strangury.

ONONIS. (De Cand. ii. 158.)

*ONONIS SPINOSA. (Wallr.) (E. B. 682.) *Anonis, Resta bovis, Cammock, Petty whin, Rest harrow.*

Fl. red or white. June, July. Small shrub. Dry heaths.

Root diuretic, detersive, aperient, used in decoction. (G.)

ORNITHOPUS. (De Cand. ii. 311.)

*ORNITHOPUS PERPUSILLUS. (Linn.) (E. B. 369.) *Small bird's-foot.*

Fl. white, with red lines. June. Annual. Sandy heaths.

Herb lithontriptic, and used in ruptures.

OROBUS. (De Cand. ii. 376.)

OROBUS LUTEUS. (Linn.) *O. Tournefortii.* (Lapeyr.) Alps.

*OROBUS NIGER. (Linn.) (E. B. 2788.) *Black bitter vetch.*

Fl. purple. June. July. Perennial. Shady rocks, Scotland.

*OROBUS SYLVATICUS. (Linn.) (E. B. 518.) *Wood bitter vetch, Bastard vetch.*

Fl. purplish white. May, June. Perennial. North of England.

OROBUS VERNUS.. (Linn.) East of Europe.

Seeds yield a resolvent farina.

*Orobus tuberosus. (Linn.) (E. B. 1153.) *Bitter Vetch, Heath pea, Tuberous orobus.*

Fl. purple or pink. May, June. Perennial. Woods.

Roots nutritive; seeds yield a resolvent farina.

Phaseolus. (De Cand. ii. 390.)

Phaseolus aconitifolius. (Jacq.) *Dolichos dissectus.* (Lamb.) *Moot.*

Phaseolus lunatus. (Linn.) *Duffin bean, Vellore bean.*

Phaseolus Max. (Linn.) *Krishna moog.*

Phaseolus Tunkinensis.

Natives of the East Indies; seeds eaten as pulse.

**Phaseolus multiflorus. (Wild.) *Scarlet runner.*

Var. α. Phaseolus coccineus. Scarlet bean. Fl. red.

Var. β. Phaseolus albiflorus. Fl. white.

July, August. Annual. Cultivated in gardens. Native of Central America.

Pods eatable, nourishing; flour of the seed emollient, diuretic, nourishing.

Phaseolus Mungo. (Linn.) *Halli Moog.* East Indies.

Seeds made into sago.

Phaseolus radiatus. (Linn.) *Mash cally.* East Indies.

Seeds eaten as pulse. (G.) Roots narcotic. (L.)

Phaseolus trilobus. (Roth.) *Dolichos trilobus.* (Linn.) East Indies.

Leaves considered by the Hindoo practitioners cooling, sedative, antibilious, and tonic, and useful as an application to weak eyes. (L.)

Phaseolus tuberosus. (Lour.) Cochin China.

Root esculent.

**Phaseolus vulgaris. (Sav.) *French bean, Févé de Rome, Haricot, Kidney bean.*

Fl. lilac or white. July, August. Annual. Native of India.

There are several varieties cultivated.

α. Unicolor. Seeds of one colour.

β. Fasciatus. Variously striped. *Zebra striped bean.*

γ. Variegatus. Variously spotted. *Speckled bean.*

And a dwarf one, Ph. nanus.

Qualities the same as those of P. multiflorus.

Piscidia. (De Cand. ii. 267.)

Piscidia erythrina. (Linn.) *Erythrina piscipula.* (Linn.) *Dogwood.* Spanish Main, &c.

Bark of the root thrown into ponds or still water stupefies the larger fish, without rendering them unwholesome, and kills the smaller ones; used to cleanse foul ulcers. (G.) Tincture of the bark most powerfully and remarkably narcotic and diaphoretic; a specific in the removal of pain caused by carious teeth; it is also used as a common fish poison. (Hamilton.)

PISUM. (De Cand. ii. 368.)

**PISUM SATIVUM. (Linn.) *Motor pea, Garden pea.*

Fl. white or red. May, September. Annual. Native country unknown.

Green pods used in the scurvy; fresh seeds saccharine, nutritive; dry seeds heavy and flatulent.

POINCIANA. (De Cand. ii. 483.)

POINCIANA PULCHERRIMA. (Linn.) *Cæsalpina pulcherrima.* (Swartz.) *Barbadoes pride, Barbadoes flower fence, Spanish carnations.* Originally from East Indies.

Tea of the leaves and flowers, and syrup of the flowers, purgative and emmenagogue; also the seeds in powder, dose 3j., in common use with the negro slave girls to procure abortion. (G.) The leaves, when bruised have a smell resembling that of savine; the infusion either of them or the flowers is considered a powerful emmenagogue, so as even to bring on abortion; the leaves are said to have been used as a substitute for senna; the seeds in powder are stated to form a remedy for the bellyache; a decoction of the leaves and flowers has also been employed with success against the fevers of Tortola; root acrid, and even poisonous; the wood makes the best of all charcoal. (L.)

PONGAMIA. (De Cand. ii. 416.)

PONGAMIA GLABRA. Tropical Asia.

The seeds of this plant, and those of the *Galedupa arborea*, yield an oil, *Kanagn nune* or *Kurrunj oil;* it is honey-brown and almost tasteless, fluid at common temperatures but gelatinizes at 55°.

PROSOPIS. (De Cand. ii. 446.)

PROSOPIS ALGAROBA. An intoxicating drink, called *Chica*, much used by the inhabitants of South America, is made from the sweet pods, it is said, of this species. These are chewed by old women, mixed with the bitter stalks of the *Schinus molle*, and left to ferment with water.

PROSOPIS DULCIS. (Kunth.) Mexico.

Yields a gum, *Mesquitina* or *Goma mesquitina*, which is used instead of gum arabic.

PROSOPIS HORRIDA. (Kunth.) The pods called *Algaroba.* (De Cand.)

PROSOPIS JULIFLORA. (D. C.) *Mimosa Juliflora.* (Swartz.) *M. piliflora.* (Swartz.) *Cashew.* Jamaica.

Leaves and twigs fatal to cattle which browse upon them, unless they are accustomed to them; legumes, although sweet, are also held to be noxious; this, however, is denied by Dr. Macfadyen, who says that the young shoots, leaves, and pods are very nutritious, and may be browsed upon by cattle of every kind with impunity during dry weather, and the pods are said to be as nutritious as corn; after rains, he states that the pods do become pernicious, and are fatal to horses; this he ascribes to the seeds at that time being prepared to sprout, germinating in the stomach, and giving off carbonic acid, which induces inflammation of the stomach and bowels. Great quantities of gum,

having all the properties of gum arabic, may be obtained by wounding the stem and large branches. (L.)

PROSOPIS PALLIDA. (Kunth.) South America.

The astringent pods, called *Algarovilla* or *Algaroba*, have been said to have been produced by this tree. (See *Inga Marthæ*.)

PROSOPIS SILIQUASTRUM. Chili.

The pods are called *Chili algaroba*. (De Cand.)

PROSOPIS SPICIGERA. (Linn.) India.

Pods esculent.

PSORALIA. (De Cand. ii. 216.)

PSORALIA BITUMINOSA. (Linn.) *Trifolium bituminosum*, *Stinking trefoil*. South of Europe.

Leaves diuretic, anticancerous; seeds yield oil.

PSORALIA CORYLIFOLIA. (Linn.) *Trifolium unifolium*. (Forsk.) India.

Seeds considered in India stomachic and deobstruent. (L.)

PSORALIA GLANDULOSA. (Linn.) *Paraguay tea*. Chili.

Leaves stomachic, vulnerary, vermifuge.

PSORALIA PENTAPHYLLA. (Linn.) Mexico.

Root, *Spanish contrayerva*, *Contrayerva*, slightly aromatic, taste sharp, used in typhoid fevers.

PTEROCARPUS. (De Cand. ii. 418.)

PTEROCARPUS DALBERGIOIDES. (Roxb.) East Indies.

Wood, *Andaman red wood*, *Rood hout*, used in dyeing.

PTEROCARPUS DRACO. (Linn.) *Pterocarpus officinalis*. (Jacq.) *P. hemiptera*. (Gaertn.) West Indies and South America.

Bark when wounded yields drops of red juice, which soon harden into crimson tears; these are collected under the name of *Dragon's blood*. (L.) Bark, wood, and leaves remarkably astringent. (O'Sh.)

PTEROCARPUS ERINACEUS. (Lamb.) *P. Senegalensis*. Woods of the Gambia.

When the branches are wounded a red juice flows, which hardens upon exposure to the air, and becomes a dark-coloured, brittle, glittering, astringent substance, the real original *Gum kino* of the shops. (L.) For the origin of the East Indian kino, see P. marsupium.

PTEROCARPUS INDICUS. (Willd.) East Indies.

Yields *Dragon's blood*.

PTEROCARPUS MARSUPIUM. (Roxb.) *P. bilobus*. Circar mountains.

Roxburgh suspects this to be the tree that produces *Gum kino*. The red juice hardens into a dark-red, very brittle gum resin, which on being powdered changes into a light brown, not unlike Peruvian bark; its taste is strongly but simply astringent. (L.) Dr. Royle has proved that East Indian kino is the inspissated juice of this tree. The whole of the kino brought to this country is prepared at Anjara Kandy, near Tellichery.

PTEROCARPUS SANTALINUS. (Linn.) Mountains of Coromandel.

Wood, *Red sanders*, *Bresille rood*, *Cœliatour hout*, *Santalum rubrum*,

Pterocarpi lignum, resinous, odoriferous, austere, astringent, tonic, used as a red colouring ingredient in spirituous tinctures; yields a resin analogous to dragon's blood. (G.) From this is obtained *Red sandal wood*, a timber chiefly used by the dyers and colour manufacturers of the present day; but also employed to colour several officinal preparations, such as the compound tincture of lavender. (L.) Also employed as the basis of various dentifrice mixtures. (O'Sh.)

PUERARIA. (De Cand. ii. 240.)

PUERARIA TUBEROSA. (D. C.) *Hedysarum tuberosa.* Circar mountains.

The root peeled and bruised into a poultice is employed by the natives of the mountains where it grows to reduce swellings of the joints. (L.)

SABINEA. (De Cand. ii. 263.)

SABINEA FLORIDA. (D. C.) *Robinia florida.* (Vahl.) West Indies.

The violet flowers are considered as poisonous. (Schomburgk ex L.)

SCHOTIA. (De Cand. ii. 507.)

SCHOTIA SPECIOSA. (Jacq.) *Guaiacum afrum.* (Linn.) Cape of Good Hope.

Seeds eaten.

SESBANIA. (De Cand. ii. 264.)

SESBANIA ÆGYPTIACA. (Pers.) *Æschynomene sesban.* (Linn.) *Sesban.* Egypt, East Indies.

Seeds stomachic, emmenagogue. (G.) Yields an excellent charcoal; used at the gunpowder works of Ishapore. (O'Sh.)

SOJA. (De Cand. ii. 396.)

SOJA HISPIDA. (Mönch.) *Dolichos soja.* (Linn.) *Soja Japonica.* (Savi.) Japan, East Indies.

Seeds used to make soy; eaten in soup.

SOPHORA. (De Cand. ii. 95.)

SOPHORA HEPTAPHYLLA. (Linn.)

SOPHORA JAPONICA. (Linn.) *Sophora.*

The roots and seeds, termed *Radices* and *Semina anticholerica*, have been employed as a remedy against cholera; and, according to X. Landerer, produce remarkably drastic effects in doses of 3 or 4 grains. They are imported from the East Indies.

SPARTIUM. (De Cand. ii. 145.)

SPARTIUM JUNCEUM. (Linn.) *Genista juncea.* (Lamb.) *Spanish broom.* South of Europe.

Qualities the same as common broom.

TAMARINDUS. (De Cand. ii. 458.)

TAMARINDUS INDICA. (Linn.) *Siliqua Arabica.* (C. Bauh.) *Palampulli.* (Rheed.) *Tamarind.* Egypt, East Indies, &c.

Pulp acidulous, cooling, laxative; stones baked, soaked in water to get off the skins, and the kernels boiled or fried, used for food. (G.) The leaves are subacid, and according to Prosper Alpinus were em-

ployed by the Arabians as an anthelmintic. (L.) *Tamarinds in the pod*, *Tamarindi fructus naturalis*, from Egypt, in bags of six cwt. each; *Red tamarinds*, *Tamarindi rubri*, *Tamarindi præparati*, the shells broken off and syrup added to preserve the pulp; *Black tamarinds*, the shell broken off and salt added to preserve the pulp; *East Indian tamarinds*, the shell broken off, and the pulp dried in the sun.

TEPHROSIA. (De Cand. ii. 248.)

TEPHROSIA APOLLINEA. (D. C.) *Galega apollinea.* Egypt and Nubia.

The leaves are often found mixed with those of senna; cultivated for its indigo in Nubia. (Hoskins ex L.)

TEPHROSIA PURPUREA. (Pers.) (L.) *Galega purpurea.* (Linn.) Coast of Coromandel.

Root bitter, a decoction prescribed by Indian doctors in dyspepsia, lientery, and tympanitis. (L.)

TEPHROSIA SENNA. (H. B. et Kunth) Popayan.

Leaves used instead of senna by the people of Popayan. (L.)

TEPHROSIA TOXICARIA. (Pers.) *Galega toxicaria.* Cayenne.

Employed in Jamaica for the purpose of poisoning the fish in rivers. It has been suggested that this plant might be substituted for digitalis, where that plant does not grow, as its action on the human system is probably the same; as the roots of T. leptostachya and the leaves of T. senna are purgative, it is probable that this plant might act as an evacuant, combined with some peculiar depressing influence on the nervous system. (Macfadyen by L.)

TESPESIA? CERCIS? Wood, *Cam wood Red wood*, *Bois de cham*, *Pao zaban*, red with black veins, more porous, lighter and smoother than either logwood, brasilletto, or Nicaragua green wood, from Africa.

TRIFOLIUM. (De Cand. ii. 189.)

TRIFOLIUM ALPINUM. (Linn.) *Alpine trefoil*, *Mountain liquorice.* Alps of Europe.

Root sweet. (G.) Possesses the same qualities as liquorice. (L.)

*TRIFOLIUM ARVENSE. (Linn.) (E. B. 944.) *Lagopus*, *Pes leporinus*, *Hare's foot.*

Fl. pale red or whitish. July, August. Annual. Sandy barren fields.

Leaves pectoral, anti-dysenteric.

TRIFOLIUM CŒRULEUM. *Lotus urbana*, *T. odoratum*, *Field trefoil.*

Herb diuretic, vulnerary, anodyne.

*TRIFOLIUM PRATENSE. (Linn.) *Lotus herba sylvestris*, *Common purple trefoil*, *Clover.*

Fl. purple. May, September. Perennial. Meadows and pastures.

Herb laxative.

TRIGONELLA. (De Cand.) ii. 181.)

TRIGONELLA FŒNUM GRÆCUM. (Linn.) *Fœnum græcum.* (Fuchs.) *Fenugreek*, *Maytee.* South of Europe, India.

Seed odoriferous, mucous, resolvent, stomachic, roasted for coffee,

dyes yellow. (G.) A decoction of the seeds used as an emollient; poultices are made of the flour; only used in veterinary medicine. (L.) Used in India in dysenteric affections, and the Arabs employ it in poultices and fomentations. (Ainslie.)

ULEX. (De Cand. ii. 144.)

*ULEX EUROPÆUS. (Linn.) (E. B. 742.) *Ulex grandiflorus.* (Pourr.) *Uvernalis.* (Thore.) *Genista spinosa, Furze, Gorse, Whins.*

Fl. yellow. February, November. Shrub. Heathy places.

Plant attenuant, diuretic, determining to the skin, occasioning nausea. (G.)

VICIA. (De Cand. ii. 354.)

*VICIA SATIVA. (Linn.) (E. B. 334.) *Common vetch.*

Fl. purple or red. June. Annual. Cultivated ground.

Seeds, *tares*, detersive, astringent. The Canadian variety makes good bread.

ORDER 56.—ROSACEÆ. (De Cand. ii. 525.)

Calyx generally of five sepals, often cohering into a tube at the base, and so five-lobed, generally persistent, most frequently free, sometimes adhering to the ovary; *petals* as many as the sepals, inserted into the calyx, with a quincuncial æstivation, generally regular; *stamens* inserted with the petals, most frequently indefinite, filaments incurved in æstivation; *anthers* bilocular, dehiscing with a double opening; *ovaries* many, one-celled, sometimes solitary from abortion, sometimes by union with each other, or with the tube of the calyx, converted into what at first sight appears to be a single ovary; *styles* simple, dilated at the summit into stigmas of various forms, generally rising from the sides of the ovary, most frequently distinct, but sometimes united; *seeds* generally one or two in each carpel, rarely numerous, erect or inverted, exalbuminous; *embryo* straight; *cotyledons* sometimes leafy, sometimes fleshy. *Herbs, shrubs*, or *trees*, with alternate *leaves*, having two stipules at the base, simple or compound; *inflorescence* various.

AGRIMONIA. (De Cand. ii. 587.)

*AGRIMONIA EUPATORIA. (Linn.) (E. B. 1335.) *Agrimonia Eupatorium Græcorum, Agrimony.*

Fl. yellow. June, July. Perennial. Borders of fields.

Herb used in gargles, also as tea. (G.) Celebrated as a vermifuge, also used in decoction as an astringent gargle and lotion. (L.)

ALCHEMILLA. (De Cand. ii. 589.)

*ALCHEMILLA ALPINA. (Linn.) (E. B. 244.) *Alpine ladies-mantle.*

Fl. green, with a tinge of yellow. July, August. Perennial. Mountains, North of England.

*ALCHEMILLA VULGARIS. (Linn.) (E. B. 597.) *Bear's foot, Common ladies-mantle.*

Fl. yellowish. June, July. Perennial. Alpine pastures.

Very astringent, used in decoctions as a bath, to render women's breasts firm. (G.) Decoction slightly tonic. (L.)

*ALCHEMILLA ARVENSIS. (Scop.) (E. B. 1011.) *Aphanes arvensis. Parsley piert.*

Fl. green. May, July. Annual. Fields, gravelly soils, &c.

Diuretic.

AMYGDALUS. (De Cand. ii. 530.)

**AMYGDALUS COMMUNIS. (Linn.) *Almond tree.*

Fl. rose-coloured or white, single or double. March, April. Tree. Native of north of Africa.

Kernels, *Sweet almonds*, *Amygdalæ dulces*, pectoral and cooling, but mawkish; imported from the south of Europe and the Barbary coast; Mogadore *Blanched almonds*, thrown into boiling water until the skin comes off by pressing them between the fingers; the hot water is then strained away, the almonds thrown into cold water, peeled and dried, either in a stove or in the sun, until they are brittle; *Burnt almonds*, used to colour and flavour liqueurs; *Bitter almonds*, *Amygdalæ amaræ*, a variety imported from Mogadore; used to relieve the flavour of the sweet, and to clear muddy water; both pressed for oil; *Almond cake*, *Amygdalæ placenta*, left on pressing the oil, used for washing the hands. (G.) The bitter and sweet almonds of the shops are both produced from varieties of this tree. *Sweet almonds* are scentless and farinaceous, containing a large quantity of fixed oil, used in emulsion and confection, and are a common article of food, but are apt to prove indigestible, and to bring on Urticaria febrilis; their skin is irritating, and should always be removed before the almond is eaten. (L.) They also contain a peculiar substance called *emulsin*. *Bitter almonds* yield a fixed oil like that of the last variety. They also contain *emulsin*, and a peculiar substance called *amygdalin*, which is not contained in the sweet almond, and to which is due the production of the volatile oil of almonds and prussic acid, produced by the action of water and heat. (Ed.) Many fatal cases of poisoning, from the incautious use of these seeds, are recorded by medical writers; bitter almonds have nevertheless been recommended as a remedy for intermittent fever, when mixed with decoction of bark; a liqueur, called *Mandel amara*, is fabricated from them by the Italians, but it is unsafe for persons out of health, or with weak stomachs, to drink it; they also produce urticaria, and have the reputation of being an antidote to intoxication. (L.)

AMYGDALUS PERSICA (Linn.), *vide* Persica vulgaris. (Mill.)

AMYGDALUS PUMILA. (Willd.) *Dwarf almond.*

Flowers purgative.

ARMENIACA. (De Cand. ii. 531.)

**ARMENIACA VULGARIS. (Lamb.) *Prunus Armeniaca.* (Linn.) *Apricock*, *Tree apricot.*

Fl. white, with a tinge of red. February, March. Small tree. Native of Armenia.

Fruit, *Apricocks*, *Apricots*, *Armeniaca mala*, *Præcocia*, nourishing, laxative, febrile; seeds bitter, saponaceous.

ARMENIACA BRIGANTIACA. (Pers.) *Brançon apricots.*

Fruit acid; kernels yield oil. (G.) From the seeds is expressed the oil called *Huile de marmote.* (De Cand.)

BRAYERA. (De Cand. ii. 588.)

BRAYERA ANTHELMINTICA. (Kunth.) *Cabotz. Kosso.* Abyssinia. Small packets of the dried flowers are sold by the Abyssinians, and,

according to Mr. Brayer, are an effetual remedy for tænia, when all other medicines have failed. (L.)

CERASUS. (De Cand. ii. 535.)

Several species of Cerasus are cultivated for their fruit, and these have produced many varieties; the principal are—

CERASUS ASPERA. (Loisel.) *Prunus aspera.* (Thunb.) Japan.
Fruit edible.

CERASUS AVIUM. (Mönch.) (E. B. 706.) *Prunus cerasus avium, Wild cherry.*
Fl. white. May. Small tree. Four varieties.
Fruit, *Black cherries, Cerasa nigra*, astringent, nauseous, but gives an agreeable flavour to wine or brandy. The cultivated varieties are called *merries* in Herts and Bucks, from the French *mérise.*

CERASUS CAPOLLIN. (D. C.) Mexico.
Bark considered a good febrifuge. (L.)

**CERASUS CAPRONIANA. (D. C.) *May duke, Morello cherry.*
Much cultivated, yielding some of our best cherries; nine varieties.

**CERASUS DURACINA. (D. C.)
Fruit known as *white, black*, and *red-heart cherries;* three varieties.

CERASUS HYEMALIS. (Michx.) *Prunus hyemalis.*
Fruit acerb, edible in winter.

**CERASUS JULIANA. (D. C.) *Gean and Guiguiers cherry, Black eagle, Herefordshire black*, &c. Two varieties.
Flowers of all these white. About May. Trees.
For the cultivated varieties of cherries, see *Don's Syst. Gard.*, vol. ii. p. 505.
The fruit of the cherry is cooling, nutritive, laxative; leaves used as tea in fevers; *Brandy cherries*, Morello cherries preserved in brandy; *Sour cherry, Amarelle, Prunus cerasus acida.* Fruit esculent.

**CERASUS LAUROCERASUS. (Loisel.) *Prunus laurocerasus.* (Linn.) *Common laurel, Cherry laurel.*
Fl. white, or cream-coloured. April, May. Large shrub. Native of Trebizond.
Leaves have been used in cookery for those of the bay-tree, but are less aromatic, and communicate the flavour of bitter almonds; as they yield prussic acid, they act on the nervous system, and are dangerous; distilled oil of the leaves poisonous to animals. (G.)

CERASUS MAHALEB. (Mill.) *Prunus mahaleb.* (Linn.) *Perfumed cherry-tree.* South Europe.
Wood, *Saint Lucie wood*, odoriferous, sudorific; kernels, *Macanet grains*, used to scent wash-balls.

*CERASUS PADUS. (D. C.) (E. B. 1833.) *Prunus padus.* (Linn.) *Bird cherry.*
Fl. white. May. Small tree. Woods and coppices.
Yields a volatile oil, similar to oil of bitter almonds, and consequently a dangerous poison. (L.)

CERASUS SEROTINA. (Loisel.) *Prunus Virginiana.* (Mill.) *Wild cherry-tree.* Virginia and Carolina.

Bark febrifuge; plum and leaves poisonous to many animals.

CERASUS UNDULATA. (Ser.) *C. capricida, Prunus undulata.* (Ham.) Himalaya mountains.

So poisonous as to kill goats in Nepal. (L.)

CERASUS VIRGINIANA. (Michx.) *Prunus rubra.* Woods of Virginia and Carolina.

Leaves considered poisonous; bark a good febrifuge. (L.)

CHRYSOBALANUS. (De Cand. ii. 525.)

CHRYSOBALANUS ICACO. (Linn.) *Cocoa Plum.* Africa, West Indies.

CHRYSOBALANUS OBLONGIFOLIUS. (Michx.) Georgia.

Fruits eaten raw and preserved.

COTONEASTER. (De Cand. ii. 632.)

*COTONEASTER VULGARIS. (Lindl.) (E. B. 2713.) *Mespilus cotoneaster.* (Linn.) *Cotoneaster.*

Fl. white. June. Small shrub. Limestone cliffs, Carnarvonshire.

Fruit astringent.

CRATÆGUS. (De Cand. ii. 626.)

CRATÆGUS AZAROLUS. (Linn.) *Pyrus azarolus.* (Scop.) *Azarole.*

Fruit of a sharpish taste, saccharine, refreshing.

*CRATÆGUS OXYACANTHA. (Linn.) *Mespilus oxyacantha.* (Gaertn.) *Spina alba, May, Hawthorn, White thorn.*

Fl. white or red. May, June. Large shrub. Hedges.

Flowers odoriferous; fruit, *Haws, Cenellæ*, yields by fermentation a refreshing acidulous liquor.

**CRATÆGUS PYRACANTHA. (Pers.) *Mespilus pyracantha.* (Linn.) *Evergreen thorn.*

Fl. white. May, June. Large shrub. Native of the south of Europe.

Fruit astringent.

CYDONIA. (De Cand. ii. 638.)

**CYDONIA VULGARIS. (Pers.) *Cydonia Europœa.* (Sav.) *Cotonea, Pyrus cydonia.* (Linn.) *Quince-tree.*

Fl. white. May, June. Small tree. Native of Candia.

Fruit, *Quince, Cydonia*, rough, astringent, binding, very stomachic; seeds, *Cydoniæ semina*, very mucilaginous. (G.) The seeds are officinal for the sake of the mucus they are covered with, and which can be extracted with hot water. The fruit forms an agreeable marmalade, and is sometimes used in the preparation of a domestic wine of some excellence. (L.)

FRAGARIA. (De Cand. ii. 569.)

FRAGARIA VESCA. (Linn.) (E. B. 1524.) *Alpine strawberry, Strawberry plant, Wood strawberry.*

Fl. white. May, July. Perennial. Woods and thickets.

Roots aperient; fruit, *strawberries*, cooling, opening, diuretic; dissolves the tartar of the teeth, diaphoretic; used in calculus, gout, and consumption.

GEUM. (De Cand. ii. 550.)

GEUM CANADENSE. (Mur.) *Geum Aleppicum.* (Jacq.) *G. strictum.* (Ait.) *Chocolate root, Blood root.* North America.

Root and leaves employed in Prince Edward's Island as a mild tonic. It is agreeably bitter, and found particularly useful in the diarrhœa of children. (L. *ex* Med. Bot. Trans. 1829, p. 8.)

GEUM MONTANUM. (Linn.) Alps of Europe.

Root, *Pink root*, imported from the south of Europe, and for the same purposes as *avens.*

GEUM RIVALE. (Linn.) *Geum nutans.* (Rafin.) (E. B. 106.) *Water avens.*

Fl. purplish-orange. June, July. Perennial. Marshes in north of England.

*GEUM URBANUM. (Linn.) (E. B. 1400.) *Caryophyllata urbana.* (Scop.) *Avens, Herb bennet.*

Fl. yellow. June. Perennial. Hedges and woods.

Roots scented like cloves; sudorific, tonic, antipodagric, stomachic, febrifuge; may be substituted for bark; when young, they give a pleasant flavour to ale, and prevent it from growing sour. (G.) They are also said to be useful in diarrhœa. (L.)

GILLENIA. (De Cand. ii. 546.)

GILLENIA TRIFOLIATA. (Mönch.) *Spiræa trifoliata.* (Linn.) *American ipecacuanha, Indian physic.* North America.

Bark of the root, *Gillenia P. U. S.*, gr. xx., emetic, tonic. (G.) It requires a larger dose than ipecacuanha, with whose properties it agrees, but is considered uncertain in its operation. (L.)

GILLENIA STIPULACEA. (Nutt.) *Spiræa stipulata.* (Willd.) North America.

A mild and efficient emetic, sometimes acting on the bowels. The dose is from twenty to thirty grains, repeated at intervals of twenty minutes until it operates. (Wood and Bache.)

LICANIA. (De Cand. ii. 527.)

LICANIA INCANA. (Aubl.) *Hedycrea incana.* (Willd.) Guiana. Fruit eaten.

MESPILUS. (De Cand. ii. 633.)

*MESPILUS GERMANICA. (Linn.) (E. B. 1523.) *Dutch Medlar.*

Fl. large, white. May. Small tree. Hedges.

Fruit extremely astringent, even when ripe; leaves and seeds used in detersive gargles. (G.)

PERSICA. (De Cand. ii. 531.)

PERSICA VULGARIS. (Mill.) *Amygdalus Persica.* (Linn.) *Common peach.*

Fl. rose-coloured. April, May. Small tree. Gardens. Native of Persia.

There are two varieties of the peach:—

α. Flesh separating from the stone. *Freestone peach.*

β. Flesh adhering to the stone. *Clingstone peach.*

The peach yields an oil similar to the oil of bitter almonds, especially the flowers and kernels, and these parts are dangerous; Dr. Christison quotes the case of a gentleman who died in consequence of having swallowed a salad of the flower, in order to purge himself; and another of a child, which perished after taking a decoction of the flowers, in order to kill worms. (L.)

**PERSICA LÆVIS. (D. C.) *Amygdalus Persica.* (Lamb.) *Nectarine.*

Fl. rose-coloured. April, May. Small tree. Native country unknown.

The two varieties of the nectarine are distinguished by the same characters as those of the peach.

The leaves and flowers of both these plants are purgative; fruit, *Persica mala*, in hot countries the same; wood used in dyeing; sold in chips, and ground. (G.)

POTENTILLA. (De Cand. ii. 571.)

*POTENTILLA ANSERINA. (Linn.) (E. B. 861.) *Fragaria anserina.* (Crantz.) *Argentina, Silver weed, Wild tansy.*

Fl, yellow. June, July. Perennial. Road sides.

*POTENTILLA ARGENTEA. (Linn.) (E. B. 89.) *Hoary cinquefoil.*

Fl. yellow. June. Perennial. Pastures and road sides.

*POTENTILLA COMARUM. (Scop.) (E. B. 172.) *Comarum palustre*, (Linn.) *Pentaphyllum rubrum palustre, Purple marsh cinquefoil.*

Fl. dingy purple. July. Perennial. Marshes and peat bogs.

Febrifuge; root of this last dyes a dirty red.

*POTENTILLA FRAGARIA. (Poir.) (E. B. 1785.) *Fragaria sterilis.* (Linn.) *Barren strawberry.*

Fl. white. March, April. Perennial. Woods, banks, &c.

Root astringent, dyes red.

*POTENTILLA REPTANS. (Linn.) (E. B. 862.) *Pentaphyllum vulgare.* (J. Bauh.) *Quinquefolium vulgare.* (Volck.) *Fragaria pentaphyllum.* (Crantz.) *Five-leaved grass, Creeping cinque-foil.*

Fl. yellow. June, August. Perennial. Meadows and pastures.

Bark of the root used as a gargle for loose teeth; leaves febrifuge, taken as tea. (G.) Other properties the same as the next species (L.)

POTENTILLA TORMENTILLA. (Nestl.) *Heptaphyllum, Sept-foil, Tormentilla, Tormentilla erecta,* (Linn.) *Tormentil.*

Root, *Tormentillæ radix*, very astringent, febrifuge, and not stimulant. (G.) In the opinion of some, this is one of the best medicines of its class, as it produces its astringent effects without causing excitement. Dr. A. T. Thomson recommends it in some kinds of diarrhœa; it was once considered a specific in syphilis. (L.)

POTERIUM. (De Cand. ii. 594.)

*POTERIUM SANGUISORBA. (Linn.) (E. B. 860.) *Pimpinella sanguisorba*, (Gaertn.) *Salad burnet, Small burnet.*

Fl. dull purple. July. Perennial. Dry and chalky pastures.

Used in salads; cordial.

PRUNUS. (De Cand. ii. 532.)

PRUNUS COCOMILIA. (Tenore.) Woods of lower mountains of Calabria.

The bark of this plant, which seems to be nothing more than a wild state of our domestic plum, is spoken of in the highest terms, as a remedy for the intermittent fevers of Calabria; in the Neapolitan hospitals it has been found superior to cinchona. (L.)

*PRUNUS DOMESTICA. (Linn.) (E. B. 1783.) *Wild plum-tree.*

Fl. white. May. Small tree. Rather rare, and a doubtful native.

There are many cultivated varieties of this plant; the principal are—

α *P. armenoides, Mirabelle plum.*
β *P. claudiana, Green gage.*
γ *P. turonensis, Orleans plum.*
δ *P. aubretiana, Magnum bonum*, or *Mogul plum.*
ε *P. pruneauliana, Damson.*

For varieties (270) and culture of plums, see *Don's Syst. of Gard.*, ii. p. 499.

Fruit laxative; *French plums, Pruna gallica*, black, acidulous, cooling, laxative, apt to purge. *Prunelloes, Imperial plums, Brignoliensa*, yellow, not apt to purge. *Prunes, Pruna, Damascena*, black, purgative.

*PRUNUS SPINOSA. (Linn.) (E. B. 842.) *P. sylvestris, Black thorn, Sloe tree.*

Fl. white. April, May. Large shrub. Hedges. Common.

Leaves substituted for tea; bark powdered ʒij. used in intermittent fevers; flowers ℈j., infused in water or whey are a pleasant purge; fruit, *Sloes, Pruna sylvestria*, gives a pleasant flavour and red colour to wine; juice of the fruit stains linen of an indelible colour. (G.) Fruit globular, black, rather larger than a black currant, acid, astringent, and very austere, not eatable except when baked or boiled with a large proportion of sugar; the juice, inspissated over a slow fire, is a substitute for catechu; in some form or other this juice is said to be used in factitious or adulterated port wine; the leaves also are reckoned among the adulterations of tea in England; they possess, in fact, a portion of that peculiar aromatic flavour which exists in Spiræa ulmaria, the American Gualtheria, and some other plants, and which resembles the more delicate perfume of green tea: a water distilled from the blossoms of the sloe is said to be used as a medicinal vehicle in Switzerland and Germany. (L. ex Smith.)

PYRUS. (De Cand. ii. 633.)

*PYRUS ARIA. (Ehrh.) (E. B. 1858.) *Cratægus aria, White beam-tree, Wild pear.*

Fl. white. June. Large shrub. Woods and hedges.

*PYRUS TORMINALIS. (Ehrh.) (E. B. 298.) *Cratægus torminalis.* (Linn.) *Sorb-tree, Wild service-tree.*

Fl. white. April, May. Large shrub. Woods and hedges.

Fruit, *Wild service, Sorb, Sorbus*, ripened upon straw until soft, eatable, astringent, useful in fluxes.

*PYRUS AUCUPARIA. (Gaertn.) (E. B. 337.) *Fraxinus sylvestris, Sorbus aucuparia*, (Linn.) *Mountain ash, Quicken, Roan.*

Fl. white. May, June. Tree. Mountainous woods.

Fruit astringent, dried and powdered makes a kind of bread; in-

fusion acidulous; seeds yield oil; bark tans better than oak bark. (G.) Flowers, bark, and root yield fully as much hydrocyanic acid as that procurable from an equal weight of cherry laurel leaves. (Lind. ex Buch. rep. xxvii. 238.) Fruit yields malic acid.

*PYRUS COMMUNIS. (Linn.) (E. B. 1784.) *Pear-tree.*

Fl. white. April, May. Small tree. Woods and hedges.

677 varieties of cultivated pear are enumerated in *Don's Syst. of Gardening*, ii. p. 606.

Fruit, *pear*, *pyrus*, nearly the same as that of the apple, but becomes much sweeter by cultivation; yields sugar.

*PYRUS MALUS. (Linn.) (E. B. 179.) *Sorbus malus.* (Crantz.) *Apple-tree.*

Fl. pale pink. May. Small tree. Woods and hedges.

Fruit of the wild crab. *Malus sylvestris*, rough to the taste, contains an astringent principle, and much malic acid; fruit of the cultivated apple *malus*, sweet, eatable.

Don, in his *Syst. Gard.*, ii. p. 624, enumerates 1400 varieties of the cultivated apple.

Rennet apple, *Poma renettia*, *C. P.*, the sort to be used in pharmacy.

*PYRUS SORBUS. (Gaertn.) (E. B. 350.) *P. domestica.* (Smith.) *Sorbus domestica.* (Linn.) *True service-tree.*

Fl. white. May. Large tree. Cornwall and Staffordshire. Rare.

Fruit rough, very astringent, even when softened.

ROSA. (De Cand. ii. 597.)

**ROSA ALBA. (Linn.) *R. alba vulgaris major*, *White* or *blush rose.*

Fl. white, or delicate blush, generally semi-double or double. June, July. Large shrub. Native of Germany.

Petals smell less agreeably than those of the hundred-leaf rose; more purgative.

*ROSA ARVENSIS. (Huds.) (E. B. 188.) *Trailing dog-rose.*

Fl. white. June, July. Small shrub. Woods and hedges.

*ROSA CANINA. (Linn.) (E. B. 992.) *Cynorrhodon*, *Dog-rose bush*, *Wild briar.*

Fl. pink. June. Small shrub. Hedges. Very common.

Root has been recommended in hydrophobia; a decoction of it used in dysentery; fruit, *hips*, *Cynosbatos*, lithontriptic, opening; the pulp, *Rosæ canini pulpa*, makes a fine conserve; excrescences made by an insect, *Bedeguar*, *Spongia rosæ*, used in calculous diseases; petals cathartic.

**ROSA CENTIFOLIA. (Linn.) *Rosa flore albopleno*, *Cabbage rose*, *Hundred leaved rose.*

Fl. white or red, generally double. Gardens. Very common.

Petals, *Flores rosarum albarum*, *Rosæ centifoliæ petala*, astringent, purgative, yield an odoriferous distilled water, and attar of roses. (G.) The petals are collected for the distillation of rose-water; they are laxative, and used in infantile diseases. (L.) *Provins rose*, *Rose de province*, *Rosa rubra*, *C. P.*, *R. provincialis*, petals deep red, scent powerful, which they preserve after drying; astringent, tonic, cephalic: may be kept for a year or eighteen months by being closely pressed

together; some prefer iron vessels for this purpose. All the varieties of the Provins roses belong to Rosa centifolia.

** ROSA DAMASCENA. (Mill.) *Damask rose.*
Fl. deep red. June, July. Small shrub. Native of Syria.
Petals, *Flores rosarum damascenarum*, pale red, good scent, more purgative than some others.

**ROSA GALLICA. (Linn.) *R. pallida, C. P., R. rubra, P. L., Pale red rose bush, French rose.*
Fl. red. June. Small shrub. South of Europe.
Petals, *Flores rosarum rubrarum, Rosæ gallicæ petala*, less odoriferous than those of the Provins rose; powder laxative. Don enumerates more than 200 varieties of this species. The dried petals of the unexpanded flowers, deprived of their white claws or peels, constitute the red rose leaves, *Flores rosæ rubræ*, of the shops. (Pereira.)

ROSA MOLLISSIMA.
Fruit edible.

**ROSA RUBIGINOSA. (Linn.) (E. B. 991.) *Sweetbriar.*
Fl. rose coloured. June. Small shrub. South of England.
Leaves odoriferous, substituted for tea.

ROSA SEMPERVIRENS. (Linn.) *Evergreen rose.* South of Europe.
Petals musky, very purgative, used for distilling attar of roses.

*ROSA STYLOSA. (Desv.) (E. B. 1895.) *R. systyla, Close-styled dog-rose.*
Fl. pink. June, July. Small shrub. Thickets and hedges.
Hips fine flavoured.

RUBUS. (De Cand. ii. 556.)

*RUBUS CÆSIUS. (Linn.) (E. B. 826.) *Dewberry bush, Small bramble.*
Fl. white. June, July. Small shrub. Thickets and borders of fields.
Properties the same as R. idæus, but sourish.

*RUBUS CHAMÆMORUS. (Linn.) (E. B. 716.) *Cloudberry, Knotberry bush.*
Fl. large, white. June. Perennial. Alpine moors.
Fruit, *Cloudberry, Knotberry*, acerb, astringent, dyes a bluish purple; leaves and tops astringent.

*RUBUS FRUTICOSUS. (Linn.) (E. B. 715.) *R. vulgaris, Blackberry, Bramble.*
Fl. rose coloured, or white. July, August. Small shrub. Hedges, &c.
Fruit, *Blackberry*, rather acerb, eatable, but soon sickening; green twigs used in dyeing black; root used in chin cough.

*RUBUS IDÆUS. (Linn.) (E. B. 2442.) *Raspberry.*
Fl. white. May, June. Small shrub. Woods.
Fruit, *Raspberry, Hindberry*, cooling, cordial, communicates a fine flavour to liqueurs; leaves form astringent and detersive gargles. Varies by cultivation, producing white or red fruit.

*RUBUS SAXATILIS. (Linn.) (E. B. 2233.) *Chamærubus, Stone bramble.*

Fl. white. June. Perennial. Stony mountainous places.

Berry esculent.

RUBUS VILLOSUS. (Ait.) *American blackberry.* Humid woods. Europe and America.

RUBUS HISPIDUS. (Linn.) *R. trivialis.* (Michx.) *American dewberry.* Canada.

Bark of the roots febrifuge, used instead of cinchona.

SPIRÆA. (De Cand. ii. 541.)

SPIRÆA FILIPENDULA. (Linn.) (E. B. 284.) *Filipendula vulgaris.* (C. Bauh.) *Dropwort, Filipendula.*

Fl. white, tipped with pink. July. Perennial. Dry pastures in chalky and gravelly soils.

Herb astringent, diuretic; roots, dried and powdered, used for bread in famines. (G.) Both this and S. ulmaria are accounted tonics on account of their bitter astringent qualities.

*SPIRÆA SALICIFOLIA. (Linn.) (E. B. 1468.) *Spiked willow, Willow-leaved spiræa.*

Fl. rose coloured. July. Small shrub. Moist woods in north of England.

Seed astringent.

SPIRÆA TOMENTOSA. (Linn.) *Hard hack.* America.

Root *Spiræa, P. U. S.* Tonic.

*SPIRÆA ULMARIA. (Linn.) (E. B. 960.) *Filipendula ulmaria.* (Berg.) *Regina prati.* (Dodon.) *Ulmaria.* (J. Bauh.) *Meadow sweet, Queen of the meadows.*

Fl. cream-coloured. July. Perennial. Meadows and watery places.

Herb sudorific, astringent, antispasmodic; flowers give a fine flavour to warm water. (G.) Taste of the herbage and flowers aromatic; a fragrant water, forming an agreeable aromatic beverage, may be distilled from the flowers. (L.) The volatile oil obtained by distillation, *Oleum Spirææ ulmariæ*, is remarkable as being identical with *hydruret of salicyle*, (C^{14} H^{5} O^{4}+H,) which is obtained artificially by distilling a mixture of one part of salicine, one part of bichromate of potash, two and a half of oil of vitriol, and ten of water.

SUDIA.

SUDIA HETEROPHYLLA. *Mauritius ipecacuanha.*

Bark emetic.

ORDER 57.—CALYCANTHEÆ.—(De Cand. iii. 1.)

Calyx coloured, tube urceolate, enclosing the ovaries, limb multipartite, the lobes unequal; *petals* none; *stamens* numerous, inserted in many rows on a fleshy disk at the fauces of the calyx, the inner ones sterile; *anthers* two-celled, adnate, dehiscing externally and longitudinally; *carpels* numerous, enclosed within the parietes of the calyx (as in the roses); *ovary* one-celled, two-ovuled, and, by the abortion of one ovule,

one-seeded; *styles* terminal, distinct, exsert from the tube of the calyx; *stigmas* simple; *akenes* enclosed within the fleshy tube of the calyx; one-seeded, the pericarp subcorneous; *seed* ascending, hilum almost opposite the cicatrix of the pericarp; *embryo* exalbuminous, straight; *cotyledons* convolute; *radicle* inferior. *Shrubs* with opposite, simple, exstipulate, rough *leaves*; *flowers* solitary, pedicellated.

Calycanthus. (De Cand. iii. 2.)

**Calycanthus floridus. (Linn.) (Bot. Mag. 503.) *Carolina allspice.*

Fl. dark purplish brown. May, June. Large shrub. Native of Carolina.

Root emetic; seed poisonous.

Order 58.—GRANATEÆ. (De Cand. iii. 3.)

Tube of the *calyx* turbinate, limb coriaceous, 5—7 cleft, with lobes valved in æstivation; *petals* 5—7; *stamens* indefinite, filaments free; *anthers* bilocular, dehiscing in front with a double opening; *style* filiform; *stigma* capitate, papulose; *fruit* large, spherical, crowned with the limb of the calyx, indehiscent, unequally divided into two chambers by a horizontal diaphragm, the upper chamber containing from five to nine cells, the smaller and lower one three-celled, with membraneous septa; *seeds* very numerous, exalbuminous; *embryo* oblong, with a short straight *radicle*, and *cotyledons* foliaceous and spirally twisted. Small *trees*, or *shrubs* with four-sided, somewhat thorny branches; *leaves* deciduous, opposite, rarely whorled or alternate, often fascicled in the axils, oblong, entire, without dots; *flowers* 2—5, scarlet, nearly sessile.

Punica. (De Cand. iii. 3.)

Punica granatum. (Linn.) *Malus punica.* (C. Bauh.) *Pomegranate.* Persia and the East.

Fruit, *Pomegranate*, *Mala punica*, *Granata*, very cooling, antibilious, astringent, cordial; rind of the fruit, *Pomegranate peel*, *Granati cortex*, *Malacorium*, astringent, detersive, vermifuge; used in tanning; from the south of Europe; double flowers of the wild trees, *Balaustiæ*, of the cultivated trees *Cytini*, tonic, astringent. (G.) A decoction of the bark of the root a powerful anthelmintic; flowers and bark of the fruit tonic and astringent; used in leucorrhœa, chronic dysentery, &c.

The acid juice of the fruit used in bilious fevers. (L.)

Order 59.—COMBRETACEÆ. (De Cand. iii. 9.)

Calyx adhering to the tube of the ovary, limb 4—5 lobed, deciduous; *petals* 4—5, inserted into the upper part of the tube of the calyx, alternate with the lobes, sometimes wanting; *stamens* inserted into the same part, twice as many as the lobes of the calyx, very rarely equal in number, or three times as many; *filaments* distinct, filiform, or subulate; *anthers* two-celled, dehiscing longitudinally; *ovary* one-celled, with from 2—4 ovules hanging from the apex of the cavity; *style* one, slender; *stigma* simple; *fruit* drupaceous, baccate, or nut-like, one-celled, by abortion one-seeded, indehiscent, often winged; *seed* pendulous, filling the cavity of the pericarp, exalbuminous; *embryo* with the radicle turned towards the hilum, plumule inconspicuous; *cotyledons* leafy, often convolute, sometimes plaited. *Trees* or *shrubs* with alternate, opposite, exstipulate, entire *leaves*; *flowers* in terminal or axillary spikes.

Bark generally artringent.

PENTAPTERA. (De Cand. iii. 14.)

PENTAPTERA TOMENTOSA. (Roxb.) *Terminalia alata.* (Roth.) *T. tomentosa.* India.

Bark astringent and febrifugal. (L.)

TERMINALIA. (De Cand. iii. 10.)

TERMINALIA ANGUSTIFOLIA. (Jacq.) *T. benzoin, Catapha benzoin, Croton benzoe.* East Indies.

A milky juice flows from the stem and concretes into a fragrant substance resembling benzoin, used in churches in the Mauritius as a kind of incense. (L. ex Royle.)

TERMINALIA BELERICA. (Roxb.) *Myrobalanus belerica.* (Breyw.) *Tani.* India.

Fruit, *Beleric myrobalans, Myrobalani belerici*, taken from ʒvj. to ℥jss., are astringent. (G.) Kernels of the fruit eaten in India and reckoned intoxicating: bark abounding in a gum resembling gum arabic, soluble in water, burning away in the flame of a candle. Ainslie reckons the fruit astringent, tonic, and attenuant. (L.) Much used in the arts as an astringent, and as the basis of several colours. (O'Sh.) The fruit, *Beleric myrobalans*, is about the size of a nutmeg, nearly spherical or slightly pentagonal, but is distinguished from the other kinds of myrobalans by the angles being rounded, and the surface not rugose; it is terminated on one side by a projecting point resembling a peduncle.

TERMINALIA CATAPPA. (Linn.) *Adamarum.* East and West Indies.

Fruit, *Indian almond*, nourishing, used by the sick: yields an oil. The kernels of several other species are eaten. (G.) Bark and leaves very astringent, and yield a black paint. (O'Sh.)

TERMINALIA CHEBULA. (Retz.) *Myrobalanus chebula.* (Gaertn.) Forests of Bengal.

Fruit, *Hurr nut, Ink nut, Chebulic myrobalans, Myrobalani chebuli;* galls on the leaves, *Aldecay*, excellent for dyeing. (G.) Galls powerfully astringent, as fit for making ink as oak galls; they yield the chintz-painters on the coast of Coromandel their best and most durable yellow. (Roxb.) With a ferruginous mud they strike an excellent black. (L.) The fruit, *Chebulic myrobalans*, is the largest kind of myrobalans; it is usually about the size of a *date*, oblong and elongated in the form of a pear at the extremity which is fixed to the peduncle; it is but slightly or not at all ribbed, of a dark-brown colour, and internally more compact than the *citrine* or *yellow myrobalans.*

Indian myrobalans, or *Black myrobalans*, are said to be obtained from the same tree as the foregoing, but to be gathered before the fruit is mature. It is much smaller than either of the other kinds, black, and shining on the surface.

TERMINALIA CITRINA. (Roxb.) *Myrobalanus citrina.* (Gaertn.) *Yellow myrobalans.* India.

Pickled myrobalans, the yellow myrobalans preserved in brine. (G.) Fruit a common article in the Hindoo Materia Medica; usually employed as a gentle purgative. (L.) *Citrine* or *Yellow myrobalans* are

rather smaller than the *Chebulic*, of an ovoid form, having five longitudinal ridges distinctly marked, and five more intermediate but less marked. The surface is shining, and the colour varying from pale to brown yellow.

TERMINALIA LATIFOLIA. (Swartz.) Jamaica.
Root used in Jamaica in diarrhœa. (L.)

TERMINALIA MOLUCCANA. (Lamb.) East Indies.
Uses the same as those of T. belerica, for which it is substituted in India. (L.)

TERMINALIA VERNIX. (Lamb.) *Varnish-tree of China.* Moluccas.
Produces the resin used in varnishing the Indian cabinets. (G.) One of the trees which furnishes the celebrated Chinese black lacquer. (O'Sh.)

ORDER 60.—RHIZOPHOREÆ. (De Cand. iii. 31.)

Tube of the *calyx* adhering to the ovary, limb 4—13 lobed, lobes valvate in æstivation; *petals* inserted into the calyx, alternate with its lobes, and equal in number to them; *stamens* inserted with the petals, and twice or thrice their number; *filaments* free, subulate, erect; *anthers* ovate, erect, inserted into the base; *ovary* adnate to the calyx, two-celled, each cell containing two or more pendulous ovules; *fruit* indehiscent, crowned by the calyx, one-celled, one-seeded; *seed* pendulous, exalbuminous; *radicle* long; *cotyledons* two, flat. *Trees* or *shrubs* growing on the sea-shores, with simple, opposite, entire, or toothed *leaves*, with stipules between the petioles; *peduncles* axillary.

RHIZOPHORA. (De Cand. iii. 31.)

RHIZOPHORA GYMNORHIZA. (Linn.) *Bruguiera gymnorhiza.* (Lamb.) East Indies.
Fruit, leaves, and even bark, eaten.

RHIZOPHORA MANGLE. (Linn.) *Mangrove.* Warm parts of America, East Indies.
Fruit and bark used in tanning; imported from the West Indies, (G.;) bark very astringent. (O'Sh.)

ORDER 61.—ONAGRARIÆ. (De Cand. iii. 35.)

Tube of the *calyx* either entirely adnate to the ovary, or adherent to its base and produced beyond the ovary; limb 2—5 lobed, generally four-lobed, the lobes valvate in æstivation; *petals* as many as the lobes of the calyx, generally regular, alternate with its lobes, contorted in æstivation, and inserted in the upper part of the tube (very rarely wanting); *stamens* sometimes as many as the petals, sometimes twice as many, and in a few cases half as many; *filaments* free, filiform; *anthers* oblong or ovate; *ovary* many-celled, often crowned by a cupular gland; *styles* filiform; *stigma* capitate or lobate; *fruit* capsular, baccate, or drupaceous, two or four celled; *seeds* numerous, (or rarely solitary,) in each cell, fixed to the central angle; *albumen* wanting, the tumid endopleura sometimes resembling albumen; *embryo* straight, with a long tapering *radicle*, and two short *cotyledons*. *Herbaceous plants* or *shrubs* with alternate or opposite *leaves*, entire or toothed, and red, purple, white, blue, or yellow, axillary or terminal *flowers*.

CIRCŒA. (De Cand. iii. 63.)

*CIRCŒA LUTETIANA. (Linn.) (E. B. 1056.) *Circœa vulgaris.* (Mönch.) *C. pubescens.* (Pohl.) *C. ovalifolia.* (Gray.) *Common enchanter's nightshade.*

Fl. white, or rose-coloured. June, July. Perennial. Woods and shady places.

Resolvent, vulnerary; formerly supposed to possess wonderful properties in regard to magic and sorcery.

EPILOBIUM. (De Cand. iii. 40.)

*EPILOBIUM ANGUSTIFOLIUM. (Willd.) (E. B. 1947.) *French willow, Persian willow, Rosebay willow herb.*

Fl. purplish, rose-coloured. July. Perennial. Margin of woods.

Suckers eatable; an infusion of the herb intoxicates; down of the seeds, mixed with cotton or fur, has been felted.

EPILOBIUM MONTANUM. (Linn.) (E. B. 1177.) *Chamænerion montanum.* (Scop.) *Broad smooth-leaved willow herb.*

Fl. rose-coloured. July. Perennial. Dry shady banks, &c.

*EPILOBIUM TETRAGONUM. (Linn.) (E. B. 1948.) *Square-stalked willow herb.*

Fl. rose-coloured. July. Perennial. Ditches and watery places.

This, and the foregoing species, are used to cleanse foul ulcers.

JUSSIÆA. (De Cand. iii. 52.)

JUSSIÆA PERUVIANA. (Linn.) Peru.

Leaves emollient.

ŒNOTHERA. (De Cand. iii. 45.)

*ŒNOTHERA BIENNIS. (Linn.) (E. B. 1534.) *Common evening primrose. Tree primrose.*

Fl. yellow. July, September. Biennial. Sandy soils, Suffolk, &c.

Root cleanses foul ulcers, and is eaten in salads.

TRAPA. (De Cand. iii. 63.)

TRAPA NATANS. (Linn.) *Tribulus aquaticus, Water caltrops.* Europe and Siberia.

Herb cooling; nuts, *Nuces aquaticæ*, farinaceous and nourishing. (G.) Fruit, called *Singara*, used extensively in Cashmere as an article of food, and also in China, where the kernel is roasted or boiled like the potato. (O'Sh.)

ORDER 62.—LYTHRARIEÆ. (De Cand. iii. 76.)

Calyx monosepalous, free, tubular, or bell-shaped; the lobes during æstivation valved or separate, the sinuses sometimes produced into small exterior lobes; *petals* inserted on the upper part of the tube of the calyx, between the lobes, various in number, sometimes none, generally very caducous; *stamens* inserted into the tube of the calyx below the petals, sometimes as numerous as they are, sometimes two, three, or four, times as many; *anthers* oval, two-celled, versatile; *ovary* free; *style* filiform; *stigma* usually capitate; *capsule* membraneous, covered, or surrounded with the calyx; when young, of two to four cells, eventually one-celled from the disappearance of the septa, opening longitudinally, sometimes bursting irregularly all round; *seeds* very numerous, small, exalbuminous, adhering to a central placenta; *embryo* straight; *radicle* turned towards the hilum; *cotyledons* flat, foliaceous. *Herbs* with opposite, rarely alternate, exstipulate, simple *leaves*, and axillary or terminal, spiked or racemed *flowers*.

AMMANNIA. (De Cand. iii. 77.)

AMMANNIA VESICATORIA. (Roxb.) *Daud maree, Blistering ammannia.* Hindostan.

Leaves acrid, universally employed by the natives of India to raise blisters in rheumatic pains, fevers, &c.; the fresh leaves, bruised, perform their office actually in half an hour. (Lindl. ex. Roxb.) In eight trials of this article, blisters were not produced in less than twelve hours in any, and in three individuals not for twenty-four hours. The bruised leaves had been removed from all after half an hour. The pain was absolutely agonising till the blister rose. We should not be justified in recommending these leaves for further trial, as they occasion more pain than cantharides, and are far inferior to the plumbago (Lalchitra) in celerity or certainty of action. (O'Sh.)

GINORIA. (De Cand. iii. 91.)

GINORIA AMERICANA. (Jacq.) *Hanchinol?* West Indies.

Juice, ℥iiij., is diaphoretic, diuretic; used in syphilis. (G.)

HEIMIA. (De Cand. iii. 89.)

HEIMIA SALICIFOLIA. (Link. et Ott.) *Nesæa salicifolia.* (H. B. et Kunth.) New Spain, on the Volcano of Jorullo.

A powerful sudorific and diuretic; the Mexicans consider it a patent medicine in venereal disorders, and call it *Hanchinol.* (L.)

LAFOENSIA. (De Cand. iii. 93.)

LAFOENSIA AMMINATA. (Vand.) *Calyplectus acuminatus.* Peru.

Leaves yellow, affording a yellow dye.

LAWSONIA. (De Cand. iii. 90.)

LAWSONIA ALBA. (Linn.) *L. inermis.* (Linn.) *Henna.* North of Africa.

Used to colour the nails of females of a reddish colour. (G.) It is also employed for dyeing hair.

LYTHRUM. (De Cand. iii. 80.)

*LYTHRUM SALICARIA. (Linn.) (E. B. 1061.) *Salicaria vulgaris.* (Berg.) *Lysimachia purpurea spicata.* (C. Bauh.) *Purple-spiked willow herb, Spiked purple lousestrife.*

Fl. purple. July. Perennial. Watery places.

Ophthalmic, astringent, used in the winter diarrhœas of northern countries; also as tea, and to make beer. (G.) An astringent which has been recommended in inveterate cases of diarrhœa. (L.) Demulcent and astringent. (Pereira.)

PHYSOCALYMNA. (De Cand. iii. 89.)

PHYSOCALYMNA FLORIDA. (Pohl.) Brazil.

This is said by Don to yield the *rosewood* of the cabinet-makers, but others ascribe it to a *Mimosa.*

ORDER 63.—TAMARISCINEÆ. (De Cand. iii. 95.)

Calyx 4—5, parted, persistent, with an imbricate æstivation; *petals* 4—5, alternate with the sepals inserted into the base of the calyx, withering, imbricated in æstivation; *stamens* equal to, or double the number of the *petals*, the *filaments* being either free, or united into a long monadelphous tube; *ovary* free, trigonal; *style* one; stigma three; *capsule* three-valved, one-celled, many-seeded; *seeds* parietal, erect, or ascending, covered with down at the apex; *albumen* none; *embryo* straight; *radicle* small, inferior; *cotyledons* plano-convex, oblong. *Shrubs* or *herbs*, with slender branches; *leaves* alternate, like scales, entire; *flowers* in close spikes or racemes

TAMARIX. (De Cand. iii. 95.)

TAMARIX AFRICANA. (Poir.) *T. Gallica.* (Willd.) Egypt and theEast.

*TAMARIX GALLICA. (Linn.) (E. B. 1318.) *French tamarisk, Tamarisk.*

Fl. pink. July. Small shrub. South coast of England.

Ashes contain sulphate of soda: a species of tamarisk affords *Arabian manna.* (G.) From this species is collected in the vicinity of Sinai an abundance of a white gummy substance resembling manna, which, however, is said to contain no mannite, but chiefly to consist of pure mucilaginous sugar, supposed to be produced by a species of coccus which inhabits the tree; the bark of the plant is slightly bitter and astringent; the galls and young shoots of this and some other species or varieties are highly astringent, and used in India both in medicine and dyeing.

MYRICARIA. (De Cand. iii. 97.)

MYRICARIA GERMANICA. (Desv.) *Tamarix germanica.* (Linn.) *German tamarisk.*

Properties the same as those of the former species.

ORDER 64.—MELASTOMACEÆ. (De Cand. iii. 99.)

Calyx divided into four, five, or six lobes, cohering more or less with the angles of the ovary, but distinct from the surface between the angles, and thus forming a number of cavities, within which the young anthers are curved downwards; *petals* equal to the segments of the calyx, arising from their base, or from the edge of a disk that lines the calyx; twisted in æstivation; *stamens* usually twice as many as the petals, sometimes equal to them in number; in the former case, those which are opposite the segments of the calyx are alone fertile; *filaments* curved downwards in æstivation; *anthers* long, two-celled, usually bursting by two pores at the apex, and elongated in various ways beyond the insertion of the filament; sometimes bursting longitudinally; before flowering contained within the cases between the ovary and sides of the calyx; *ovary* more or less coherent with the calyx, with several cells and indefinite ovules; *style* one; *stigma* simple, either capitate or minute; a cup often present upon the apex of the ovary, surrounding the style; *pericarp* either dry and distinct from the calyx, or succulent and combined with it, with several cells; if dehiscent, bursting through the valves, which therefore bear the septa in the middle; placentæ attached to a central column; *seeds* innumerable, minute, with a brittle testa and no albumen, usually with appendages of some kind; *embryo* straight, or curved with equal or unequal cotyledons. *Trees, shrubs,* or *herbaceous plants,* with opposite, undivided, usually entire *leaves,* not dotted and with several ribs; *flowers* terminal, usually thyrsoid.

MELASTOMA. (De Cand. iii. 144.)

MELASTOMA ALATA.

MELASTOMA SUCCOSA.

Juice used to wash wounds. The berries of various species of Melastoma dye a black which is very lasting, and many of them are eatable.

MELASTOMA HIRTA. (Willd.) *Hairy melastoma.* Jamaica.

Leaves powdered used to sprinkle on ulcers; berries yield a juice like that of myrtle berries; also used for ulcers.

TOCOCA. (De Cand. iii. 165.)

TOCOCA GUIANENSIS. (Aubl.) Guiana.

Berries eatable.

Order 65.—ALANGIEÆ. (De Cand. iii. 203.)

Calyx superior, campanulate, 5—10 toothed; *petals* 5—10, linear, reflexed; *stamens* long, exserted, two or four times the number of the petals; *filaments* free, filiform, villous at the base; *anthers* adnate, bilocular, linear, turned inwards, dehiscing longitudinally by a double opening, often empty; *disk* fleshy, at the base of the limb of the calyx; *drupe* oval, somewhat crowned by the calyx, fleshy, slightly ribbed and downy, nucleus without valves, one-celled, bony, with a foramen at the apex; *seed* one, (or three, according to Rheed,) inverted ovate; *albumen* fleshy, friable; *embryo* straight; *radicle* long, ascending; *cotyledons* flat, foliaceous, cordate, ovate. Large *trees*, branches often spinous; *leaves* alternate, exstipulate, ovate, lanceolate, entire, without dots; *flowers* axillary, fascicled; *fruit* eatable.

Alangium. (De Cand. iii. 203.)

Alangium decapetalum. (Lamb.) *Grewia salvifolia.* (Linn.) *Alangi* and *Angolum.* Stony mountains of Malabar.

Alangium hexapetalum. (Lamb.) *Kura angolam, Namédoce.* Malabar.

Roots aromatic, cathartic. (G.) Said by the Malays to have a purgative hydragogue property. (L. ex Royle.) The juice of the Alangium is said to be purgative, but the fact is not well established. (O'Sh.)

Order 66.—PHILADELPHEÆ. (De Cand. iii. 205.)

Tube of the *calyx* turbinate, adhering to the ovary, limb with from four to ten divisions, persistent; *petals* equal in number to, and alternate with, the segments of the calyx, convolute, imbricate in æstivation; *stamens* 20—40, inserted into the fauces of the calyx, in 1—2 rows; *styles* either distinct, or more or less consolidated into one; *stigmas* many; *capsule* semiadnate to the calyx, 4—10 celled, many-seeded; *seeds* scobiform, subulate, smooth, heaped in the angles of the cells upon an angular placenta, with a loose membraneous aril; *albumen* fleshy; *embryo* inverted, almost as long as the albumen; *cotyledons* oval, obtuse, rather flat; *radicle* longer than the cotyledons, superior, straight, obtuse. *Shrubs*, with exstipulate, opposite, not dotted *leaves*, with axillary or terminal *flowers* in trichotomous cymes; *flowers* always white.

Philadelphus. (De Cand. iii. 205.)

**Philadelphus coronarius. (Linn.) (Bot. Mag. 391.) *Syringa suaveoleus.* (Mönch.) *Syringa, Mock orange.*

Fl. white, odorous. June. Large shrub. South of Europe.

Flowers strong scented; leaves detersive, used as tea.

Order 67.—MYRTACEÆ. (De Cand. iii. 207.)

Calyx of 4—6, generally five sepals, united into a tube, adnate with the ovary; *petals* inserted on the calyx, equal in number to its segments, and alternate with them, quincuncial in æstivation, very rarely none; *stamens* inserted with the petals, often in many rows, double in number, or some multiple of them; *filaments* sometimes free, sometimes connected in several parcels, curved inwards at the apex before flowering; *anthers* ovate, two-celled, small, dehiscing with a double opening; *carpels* four to six, generally five, often by abortion fewer, cohering into a many-celled ovary, adnate with the calyx; *style* simple; *stigma* simple; *fruit* various, generally many-celled and many-seeded; *seeds* variable in form; *embryo* exalbuminous. *Trees*, or *shrubs*, with *leaves* generally opposite, rarely alternate, without stipules, entire, dotted with pellucid glands, and with a nerve running parallel to the margin; *inflorescence* variable, usually axillary; *flowers* red, white, occasionally yellow, never blue.

BARRINGTONIA. (De Cand. iii. 288.)

BARRINGTONIA RACEMOSA. (Blume.) *Eugenia racemosa.* (Linn.) *Stravadium racemosum.* Malabar.

Root slightly bitter, but not unpleasant; considered by the Hindoo doctors valuable on account of its aperient, deobstruent, and cooling properties; bark reputed to possess properties similar to those of Cinchona. (L. ex Ainslie.)

BERTHOLLETIA. (De Cand. iii. 293.)

BERTHOLLETIA EXCELSA. (H. and Bonpl.) Brazil.

The seeds constitute the well-known *Brazil nuts* of the shops of London.

CALYPTRANTHES. (De Cand. iii. 256.)

CALYPTRANTHES AROMATICA. (St. Hil.) Rio Janeiro.

Young flower-buds have much the same qualities as cloves, for which they might be advantageously substituted. (L. ex Aug. de St. Hilaire.)

CARYOPHYLLUS. (De Cand. iii. 261.)

CARYOPHYLLUS AROMATICUS. (Linn.) *Myrtus caryophyllus.* (Spreng.) *Eugenia caryophyllata.* (Thunb.) *Clove tree.* Molucca Islands.

Flower-buds of the tree, before they open, dried and smoked, *Cloves, Girofle anglais, Caryophyllus aromaticus, Caryophylli*, hot, stimulating, and aromatic; imported from the West Indies in chests; an inferior kind from Cayenne, *Girofle de Cayenne;* preserved cloves are also imported; the ripe fruit, *Mother cloves, Fusses, Antophylli*, large, less aromatic; *Preserved mother cloves*, stomachic and antispasmodic; the foot-stalks, *Griffes de girofle*, used to flavour distilled spirit. (G.) Stimulant and carminative, similar in effect to Eugenia pimenta; the cloves of the shops are the dried flower-buds; *Oil of cloves* is a common remedy for the tooth-ache. (L.)

EUCALYPTUS. (De Cand. iii. 216.)

EUCALYPTUS MANNIFERA. (Mudie.) New Holland.

Exudes a saccharine mucous substance, resembling manna in action and appearance, but less nauseous; it is not produced by insects, and only appears in the dry season (Med. Bot. Trans. l. c.); other species yield a similar secretion at Moreton Bay and in Van Dieman's Land; Mr. Backhouse says it coagulates and drops from the leaves in particles often as large as an almond. (Comp. Bot. Mag. ii. 69.) (L.)

EUCALYPTUS PIPERITA. New Holland.

Yields an oil by distillation, which is very similar, if not identical with oil of cajeput; it is a powerful solvent of caoutchouc. It may be probably used with advantage in the manufacture of varnish, as it readily dissolves copal, and when its solution is spread over a surface, the oil soon evaporates, leaving a hard, brilliant, and uniform coating of the resin.

EUCALYPTUS RESINIFERA. (Smith.) *Metrosideros gummifera,* (Gaertn.) *Brown gum tree, Iron bark tree.* New Holland.

Yields the *Brown gum*, or *Botany Bay kino*, which is the inspis-

sated juice of the tree. It is said that as much as sixty gallons of juice is sometimes obtained from a tree. Both the bark and the inspissated juice have been imported as astringent substances.

EUCALYPTUS ROBUSTA. (Smith.) New Holland.

Often contains large cavities in its stem, between the annual concentric circles of wood, filled with a most beautiful red, or rich vermilion-coloured gum. (L. ex Smith in Bot. Trans.)

EUGENIA. (De Cand. iii. 262.)

EUGENIA PIMENTA. (D. C.) *Myrtus pimenta.* (Linn.) *Pimento*, or *Allspice.* West Indies.

Myrtus pimenta, *Allspice tree:* fruit dried before it is thoroughly ripe, *Allspice*, *Jamaica pepper*, *Clove pepper*, *Piper jamaicense*, *Pimenta*, *Pimentæ baccæ*, *Piper odoratum*, *P. caryophyllatum*, is heating, aromatic, used as a sauce, and in liqueurs; yields an essential oil. (G.) All the plant, especially the unripe fruit, abounds in an essential oil, which is a powerful irritant, and is often used to allay toothache; the bruised berries are carminative, stimulating the stomach, promoting digestion, and relieving flatulency. (L.)

GUSTAVIA. (De Cand. iii. 289.)

GUSTAVIA SPECIOSA. (D. C.) *Pirigara speciosa.* (H. B. et Kunth.) New Granada.

Produces singular effects upon the constitution; according to Humboldt and Bonpland, children are very fond of the fruit, and become quite yellow after eating it, but in 24—48 hours they regain their natural colour without any remedy; in Burnett's Outlines of Botany, it is asserted, by some strange mistake, that after it remains for 24 or 48 hours, nothing can erase the colour. (L.)

JAMBOSA. (De Cand. iii. 286.)

JAMBOSA VULGARIS. (D. C.) *Eugenia jambos.* (Linn.) *Eugenia jamboo.* (Roxb.) *Myrtus jambos.* (H. B. et Kunth.) Malacca.

Fruit eatable, aromatic. The fruit of this and other species called *Rose apples*, in the East.

LECYTHIS. (De Cand. iii. 290.)

LECYTHIS OLLARIA. (Linn.) *Ollato*, *Sapucaya.* Brazil.

This is one of the most gigantic trees of the forests of Brazil. The bark is easily separable, by beating the liber into a number of fine distinct layers, which divide so neatly from each other that they have the appearance of satin-paper. The seeds of this and other species are eatable, but leave a bitter after-taste.

LECYTHIS ZABUCAJO. (Aubl.) *Quatele*, *Zabucajo.* Guiana.

Seeds eatable. Have been called *Brazil nuts.*

LEPTOSPERMUM. (De Cand. iii. 226.)

LEPTOSPERMUM SCOPARIUM. (Smith.) *Philadelphus scoparius.* (Ait.) *Melaleuca scoparia.* (Wendl.) New Holland.

Leaves used as tea.

MELALEUCA. (De Cand. iii. 211.)

MELALEUCA MINOR. (Smith.) *M. Cajuputi.* (Roxb.) *Kya putty tree.* Moluccas.

Leaves yield an essential oil, called *Cajuput*, *Cajeput*, or *Kyapootie oil*, which is obtained by distillation. It is a green aromatic oil, and is used in toothache and rheumatic affections, and as an internal remedy in hysteria and epilepsy, flatulent colic and cholera. A powerful antispasmodic, diffusible, stimulant, and sudorific.

MELALEUCA LEUCADENDRON. (Linn.) Molucca Islands.

By some said to give Cajuputi oil, but has been asserted by Roxburgh to possess little or no fragrance in its leaves, and not to be ever employed as far as he could discover in the distillation of that drug. (L.)

MYRCIA. (De Cand. iii. 242.)

MYRCIA ACRIS. (D. C.) *Eugenia acris, Wild clove.* West India Islands.

Supposed to have been confounded with Eugenia pimenta, in whose aromatic qualities it altogether participates. (L.)

MYRTUS. (De Cand. ii. 238.)

**MYRTUS COMMUNIS. (Linn.) *Common myrtle.*

Fl. white. July, August. Large shrub. South of Europe.

Leaves odoriferous, cephalic, astringent; bark and leaves used in tanning; berries used in dyeing, and to form an extract; flowers and leaves yield an essential oil by distillation, and the berries a fixed oil, *Myrteum.* (G.) Myrtle buds and berries were eaten as spice by the ancients, and are still used in Tuscany instead of pepper; the Tuscans also prepare a sort of myrtle wine, which they call *Myrtidanum;* the distilled water of myrtle flowers is that very agreeable perfume known by the name of *Eau d'ange.* (L. ex Burnett.)

MYRTUS CHEKEN.

Juice from the green wood used in glaucoma. (G.)

MYRTUS LUMA.

Berries used to make wine; leaves make a very good cordial tea; root astringent. (G.)

MYRTUS UGNI. (Molin.) Chili.

Root used in dysentery; leaves used as tea.

PSIDIUM. (De Cand. iii. 232.)

PSIDIUM POMIFERUM. (Linn.) Mexico.

Fruit esculent.

PSIDIUM PYRIFERUM. (Linn.) *Psidium vulgare.* (Rich.) *Guayava pyriformia.* (Gaertn.) *Bay plum, Guava tree.* America.

Young leaves, buds, and fruit, in decoction, astringent; marmalade of the fruit the same.

ROBINSONIA.

ROBINSONIA MELIANTHIFOLIA. (Schr.) *Touroulia Guajanensis.* (Aubl.)

Berry edible. (G.)

Order 68.—CUCURBITACEÆ. (De Cand. iii. 297.)

Flowers hermaphrodite, monœcious, or diœcious, axillary; *calyx* gamosepalous; *sepals* five, more or less coherent at the base, and adhering to the carpels through the medium of the torus; *petals* five, free, or somewhat cohering, distinct from the calyx, or rarely adhering to it, arising from the margin of the torus, entire, or rarely imbricated; *stamens* five, free, or generally triadelphous, rarely triadelphous and syngenesious; *filaments* sometimes hairy; *anthers* bilocular, very long, flexuose, rarely ovate and short; *style* short; *stigmas* 3—5, bilobed, thick, velvety, rarely fimbriated; *carpels* 3—5, fleshy, surrounded by the torus and calyx, forming a pepo or gourd, the middle nerve of the carpels being central, and the seminiferous margins external; umbilical cord tumid near the seed; *arillus* watery, becoming membraneous by drying; *seeds* generally obovate, compressed, attached to the parietes of the fruit, the apex being more or less directed towards the centre, the margin often tumid by drying, appearing 2—3 lobed at the apex and base; *hilum* oblique at the apex of the seed, the spermoderm being there abruptly perforated by the vessels of the stigma, while the vessels of nutrition encircle the margin of the seed; *embryo* straight, exalbuminous; *cotyledons* leafy, pelmatinerved; *radicle* basilar, directed towards the hilum; *root* annual or perennial, fibrous, or tuberous; *stem* sarmentaceous, herbaceous, or shrubby, generally striated; *leaves* palmate, nerved, or often covered with very rough hair; *cirrhi* (or abortive leaves), solitary, lateral, undivided or divided; *flowers* solitary, paniculated, or fasciculated, yellow, white, or rose-coloured; bracteas generally wanting; branches arising from between the leaves and cirrhi.

Fruits mostly esculent, but a few have the laxative power so increased as to become drastic purgatives.

Bryonia. (De Cand. iii. 304.)

Bryonia Abyssinica? (Lamb.) *Abyssinian bryony.* Africa.
Root esculent when boiled.

Bryonia alba. (Linn.) *Bryonia nigra.* (Rupp.) *Black-berried bryony.* South of Europe.
Properties the same as B. dioica.

Bryonia callosa.
Seeds vermifuge, yield an oil.

*Bryonia dioica. (Jacq.) (E. B. 439.) *B. alba.* (Reich.) *Red-berried bryony, White bryony.*
Fl. with greenish veins. May, June. Thickets and hedges.
Root acrid and purgative, owing to the presence of an extractive matter called *Bryonine;* it produces violent vomiting and purging, tormina, profuse watery evacuations, and fainting; it is not admitted into the British Pharmacopœias, but is a frequent instrument in the practice of quack doctors in the country; Burnett says it is sold in Covent Garden market as a discutient to remove the bruise of a blackened eye; Withering considers it one of the best cathartic medicines for horned cattle. (L.)

Bryonia epigæa. (Rottl.) India.
Powder of the root given by the native practitioners as an aperient and alterative in doses of a pagoda weight once daily for a week in chronic dysentery and venereal affections. (O'Sh. ex Ainslie.)

Bryonia rostrata. (Rottl.) Tranquebar.
Root prescribed in India as an astringent and emollient poultice in cases of piles; it is also used as a demulcent in form of a powder. (L. ex Ainslie.)

Cucumis. (De Cand. iii. 299.)

Cucumis Anguria. (Linn.)
Cucumis Citrullus. (Ser. MSS.) } *Water melon.* { Jamaica. Africa & India.
Fruit eatable, refreshing; flesh of the fruit saccharine and watery.

Cucumis Chate. (Linn.) Egypt and Africa.
Fruit has a sweet refreshing juice.

Cucumis Colocynthis. (Linn.) *Colocynthis, Coloquintida,* κολοκυνθις, (*Diosc.*) Egypt, Turkey, Coromandel.

Fruit, *Shell colocynth*, imported from the Levant; pulp of the dry fruit, *Bitter apple, Peeled colocynth, Colocinthidis pulpa*, also imported; purgative; the fruit contains the intensely bitter resinoid called Colocynthin; it is very acrid, and a considerable number of severe cases of poisoning have occurred in the human subject; nevertheless, in combination with other substances, the extract is one of the commonest of cathartics.

Cucumis hardwickii, (Royle.) called by the natives *Puharee indrayun*, or *Hill colocynth*. Foot of the Himalaya.

Properties similar to those of C. colocynthis. (L.)

**Cucumis Melo. (Linn.) *Melo, melon.*

Fl. yellow. July, August. Annual. Native of Asia.

Fruit very refreshing, much eaten in France, where it takes the place of our potatoes.

Cucumis pseudo colocynthis. (Royle.) *Indrayun, Bisloombha.* India.

Substituted in India for the true Colocynth. (L.)

**Cucumis sativus. (Linn.) *C. hortensis, Cucumber.*

Fl. yellow. May, July. Annual. Native of India.

Fruit eaten, cooling; young fruit, *Girkins*, pickled for a sauce; *Salted Cucumbers*, imported from Russia; seeds yield oil.

Cucumis utilissimus. (Roxb.) Bengal.

Powder of the toasted seeds said to be a powerful diuretic, and serviceable in promoting the passage of sand or gravel. (L. ex Roxb.)

Cucurbita. (De Cand. iii. 316.)

Cucurbita Melopepo. (Linn.) *Squash.*

Fruit better tasted than that of C. pepo, but of the same quality.

**Cucurbita Pepo. (Linn.) *Pepo, Common gourd* or *Pumpkin, Pumpion.*

Fl. yellow. June, August. Annual. Native of Asia.

Seeds cooling; leaves, No. 15—20, in decoction, form a purgative clyster, applied externally to burns, erysipelas, &c. (G.)

**Cucurbita ovifera. (Linn.) *Vegetable marrow.*

Fl. yellow. July, September. Annual. Native of Astracan.

Fruit an excellent pot-herb, coming into use in England.

Feuillea. (De Cand. iii. 297.)

Feuillea cordifolia. (Poir.) *F. hederacea.* (Turp.) *Cocoon antidote.* West Indies.

Alexiterial, febrifuge, used in venomous bites; kernel of the fruit called in St. Domingo *Noix de serpent*, infused in rum or water, used against sedative poisons.

FEUILLEA TRILOBATA. (Linn.) *F. scandens.* (Linn.) *Calabash cocoon antidote.* West Indies.

Seeds bitter and laxative, a large dose vomits. (G.) The bitter seeds of this and the last are said by Drapiez to be a powerful antidote against vegetable poisons. They purge and vomit with rapidity. (L.)

LAGENARIA. (De Cand. iii. 299.)

LAGENARIA VULGARIS. (Ser. MSS.) *Cucurbita lagenaria.* (Linn.) *Calabash gourd, Bottle gourd.* East Indies.

Seeds cooling; leaves, No. 15—20, in decoction, form a purgative clyster. (G.) In the wild state the fruit is poisonous; some sailors died at one of our outports a few years since from drinking beer that had been standing in a flask made of a bottle gourd; Dr. Royle says that he learned from a very respectable and intelligent native doctor, attached to the gaol hospital at Saharumpore, that he had seen a case of poisoning from eating of the bitter pulp, in which the symptoms were those of cholera. (L.)

LUFFA. (De Cand. iii. 302.)

LUFFA AMARA. (Roxb. fl. Ind. iii. 715.) East Indies.

Every part extremely bitter; fruit violently cathartic and emetic. Juice of roasted young fruit applied to the temples by the natives of India to cure headache. Ripe seeds, either in infusion or substance, used by them to vomit and purge. (L.)

LUFFA BINDAAL. (Roxb. fl. Ind. iii. 717.) Hindostan.

Considered in northern India a powerful drastic in cases of dropsy. (L. ex Royle.)

LUFFA EGYPTIACA. (Mill.) *Momordica luffa.* (Linn.) Arabia.

Used to rub the body in cutaneous eruptions; fruit eatable.

LUFFA PURGANS. (Mart.) *Momordica oncha.* Brazil.

Fruit called *Cabacinha* or *Buchinha*, used by the natives of Pernambuco as a substitute for colocynth. A peculiar active principle, called *Buchanina*, is said to have been extracted from it.

MELOTHRIA. (De Cand. iii. 313.)

MELOTHRIA PENDULA. (Linn.) South America.

Extremely drastic; four ripe fruits will purge a horse. (L.)

MOMORDICA. (De Cand. iii. 311.)

MOMORDICA BALSAMINA. (Linn.) *Balsam apple, Cerasse.* East Indies.

Root purgative, ʒ ij. in powder; plant vulnerary, balsamic, refreshing; leaves used in decoctions for clysters; fruit, infused in oil, makes a vulnerary balsam; the juice that exudes upon cutting the ripe fruit, used for fresh wounds. (G.) This plant is supposed to be that called Neurosperma cuspidata by Rafinesque, the fruit of which is said to be a dangerous poison, but in moderate doses to act as a powerful hydragogue. (L.)

MOMORDICA CHARANTIA. (Linn.) *Papareh.* East Indies.
Very bitter, vermifuge; used in brewing in the East Indies.

MOMORDICA ELATERIUM, (Linn.) *Ecbalium officinarum.* (Richard.) *Cucumis agrestis.* (Blackw.) *C. asininus.* (C. Bauh.) Σικυς ἄγριος, (*Dioscor.*) *Spirting cucumber, Wild cucumber.* South of Europe.
Root and herb hydragogue, vermifuge; leaves used externally, detersive and resolvent; fruit, *Elaterii poma*, yields *Elaterium;* juice of the fruit hydragogue. (G.) *Elaterium*, a substance obtained from the juice surrounding the seeds of this plant, is so powerful a poison, that a single grain has been known to act powerfully on man, but its strength and effects are uncertain; it is used in practice, in the form of an extract as a violent cathartic and hydragogue. Dr. Christison quotes a case of a medical man in Paris, who, after carrying a specimen to his lodgings in his hat, was seized with acute pain &c. in his head, succeeded by colic pains, fixed pains in the stomach, frequent watery purging, bilious vomiting, and some fever. (L.)

MURICIA. (De Cand. iii. 318.)

MURICIA COCHINCHINENSIS. (Lour.) China and Cochin China.
Seeds and leaves astringent and aperient; employed by the Chinese in obstructions of the liver, tumours, and malignant ulcers. Externally employed in fractures and dislocations. (L.)

TRICHOSANTHES. (De Cand. iii. 313.)

TRICHOSANTHES AMARA. (Linn.) St. Domingo.
Fruit very bitter, purgative, emetic, used to destroy rats. (G.) Seeds bitter and astringent, sometimes emetic. (L. ex Martius.)

TRICHOSANTHES CORDATA. (Roxb. fl. Ind. iii. 703.) *Boomee koomura.* Hindostan
Root used by the natives of India as a substitute for Columbo root. (L.)

TRICHOSANTHES CUCUMERINA. (Linn.) Hedges in Bengal.
Fruit reckoned in India an anthelmintic. (L.)

TRICHOSANTHES DIOICA. Bengal.
An alcoholic extract of the unripe fruit is described as a powerful and safe cathartic in three to five grain doses, repeated every third hour till the desired effect is produced. (O'Sh.)

TRICHOSANTHES PALMATA. (Roxb. fl. Ind. iii. 704.) India.
Fruit reckoned poisonous. (Roxb.) Pounded small and intimately blended with warm cocoa-nut oil, it is considered a valuable application in India for cleansing and healing the offensive sores that sometimes form within the ears; it is also supposed to be a useful remedy, poured up the nostrils, in cases of ozeena. (L. ex Ainslie.)

TRICHOSANTHES VILLOSA. (Blume.) Java.
Fruit acts like colocynth. (L.)

ORDER 69.—PAPAYACEÆ. (Endl. Gen. Pl. 932.)

Lactescent trees, with cylindrical trunks, indigenous to tropical America, but introduced by cultivation into Asia and Africa. Allied to Cucurbitaceæ and Passifloreæ.

Carica. (Endl. Gen. Pl. 933.)

Carica Papaya. (Linn.) *Papaw.* West Indies.

Fruit nutritive; seed an excellent vermifuge, leaves saponaceous, milky; juice corrosive; is mixed with water, and used to wash meat to make it tender. (G.) The milky juice is a powerful vermifuge; the powder of the seeds has the same property; fibrine is contained in the juice in such abundance that the latter bears a most extraordinary resemblance to animal matter; water impregnated with the milky juice makes meat washed with it tender; the same effect is produced when the meat is suspended among the branches of the trees; it first becomes tender, and then passes into a state of putridity. Vauquelin says that a sample of the juice which he examined had the taste and smell of boiled beef; the leaves are used by the negroes to wash linen instead of soap, and the fruit is eaten as a vegetable. (L.)

Order 70.—PASSIFLOREÆ. (De Cand. iii. 312.)

Sepals 5—10, coherent into a tube, free at the apex, in 1—2 rows, the outer lobes large, foliaceous, the inner ones alternate with the former, more petaloid in appearance, sometimes wanting, fauces naked or adorned with coloured filamentous or membraneous appendages, in one or many rows, and the lower part often closed by an operculum; *petals* none (in Passiflora); *stamens* five; *filaments* opposite the external lobes of the calyx, monadelphous, the tube sheathing the stalks of the ovary; *anthers* versatile, appearing extrorse, but in reality introrse; *torus* elongated into a long cylindrical stalk; *ovary* free, ovate; *style* none, or short; *stigmas* three, thick, sub-bilobed at the apex; *fruit* naked, or surrounded by the calyx, supported on the stipitate torus, three-valved, one-celled; *valves* either dry and dehiscent, or fleshy, coherent, indehiscent, having a longitudinal placenta in the middle; *seeds* attached to the placenta in many rows, covered with a large and often pulpy arillus, compressed, generally furrowed. Herbaceous *plants*, or *shrubs*, usually climbing, seldom erect; with alternate stipulate *leaves*, and axillary or terminal *flowers*.

Passiflora. (De Cand. iii. 322.)

**Passiflora cœrulea. (Linn.) (Bot. Mag. 28.) *Common blue passion flower.*

Calyx green and rose-coloured, corolla in circles of red, white, and blue. August, September. Shrub. Brazils and Peru.

Passiflora incarnata. (Linn.) *Red passion-flower.* Virginia. South America.

Passiflora normalis. (Linn.) *Wild passion-flower.* South America.

Roots sudorific.

Passiflora contrayerva. (Smith.) Mexico.

Said to be alexipharmic and carminative.

Passiflora fœtida. (Cav.) *Passiflora variegata.* (Mill.) *P. hirsuta.* (Lodd.) West Indies.

Esteemed an emmenagogue; thought to be serviceable in hysteria; the infusion of the flowers is also taken as a pectoral in the West Indies. (L.)

Passiflora laurifolia. (Linn.) *Sweet Calibash.* South America.

Passiflora maliformis. (Linn.) *Water lemon.*

Fruit esculent.

PASSIFLORA QUADRANGULARIS. (Linn.) *Granadilla.*

Root emetic; powerfully narcotic, said to be cultivated in several French settlements for the sake of its root; said to owe its activity to a particular principle called *Passiflorine;* the fruit, called *Granadilla*, is a common article in a Brazilian dessert. (L.)

MURUCUJA. (De Cand. iii. 333.)

MURUCUJA OCELLATA. (Pers.) *Passiflora murucuja.* (Linn.) *Bull's hoof, Dutchman's laudanum.* West Indies.

Herb made into a syrup, or flowers infused in rum, narcotic; used for laudanum.

ORDER 71.—PORTULACEÆ. (De Cand. iii. 351.)

Sepals two, seldom three or five, cohering by the base; *petals* generally five, sometimes 3—4—6, rarely none, either entirely free, or connected at the base into a short tube, and when equal in number alternate with the sepals; *stamens* inserted along with the petals either into the base of the calyx, or perhaps on the torus, variable in number even in the same species; all fertile; *filaments* free among themselves, but connected to the petals, to which they are also opposite; *anthers* versatile, two-celled, opening by a double chink; *ovary* superior, one-celled; *style* one, (sometimes wanting,) filiform; *stigmas* several, much divided; *capsule* one-celled, dehiscing either transversely or by three valves, from apex to base, rarely indehiscent, one-seeded; *seeds* numerous, affixed to a central placenta; *albumen* farinaceous; *embryo* surrounding the albumen, with a long cylindrical radicle. Succulent *herbs,* or *shrubs; leaves* alternate, seldom opposite, entire, exstipulate, or with membraneous ones; *flowers* axillary or terminal, usually ephemeral, expanding only in bright sunshine.

CALANDRINIA. (De Cand. iii. 358.)

CALANDRINIA UMBELLATA. (D. C.) *Talinum umbellatum.* (Ruiz. et Pav.) Chili.

Flowers used as a cosmetic.

CLAYTONIA. (De Cand. iii. 360.)

CLAYTONIA PERFOLIATA. (Donn.) *C. cubensis.* (Bonpl.) West Indies, America.

Used both as a salad and potherb.

PORTULACA. (De Cand. iii. 353.)

PORTULACA OLERACEA. (Linn.) *Portulaca, Purslane.* Europe, India, America.

Used as a potherb, cooling, useful in scurvy, heat of urine, and bilious disorders; seeds vermifuge.

PORTULACA PILOSA. *Jamaica purslane.* West Indies.

In salads diuretic, as also its expressed juice.

PORTULACA QUADRIFIDA. (Linn.) *P. linifolia.* (Forsk.) India.

The bruised fresh leaves are prescribed as an external application in erysipelas, and an infusion given in dysuria. (O'Sh.)

ORDER 72.—PARONYCHIEÆ. (De Cand. iii. 365.)

Calyx of five (rarely 3—4) sepals, more or less concreted together, hence the calyx is five-partite, five-cleft, or five-toothed; *petals* small, squamiform, appearing like sterile stamens, generally as many as the sepals, and inserted into the tube of the calyx, exactly opposite the lobes, even in the apetalous genera, equal in number to the sepals, or by abortion fewer; *filaments* distinct; *anthers* two-celled; *ovary* free; *styles* two or three; distinct, or more or less united; *fruit* dry, small, generally membraneous,

sometimes without valves, indehiscent, sometimes three-valved; *seeds* numerous, affixed to a central placenta, or solitary, suspended by a long cord which arises from the bottom of the cell; *albumen* farinaceous; *embryo* cylindrical, lateral, curved, or surrounding the albumen; *radicle* turned towards the hilum. Branched *herbs*, or *shrubs*, with *leaves* generally opposite, with or without scariose stipules; *flowers* sessile, small, entire.

ACHYRANTHES. (Endl. Gen. Pl. 303.)

ACHYRANTHES LANATA. (Linn.) *Illecebrum lanatum.* Bengal.
Root demulcent, prescribed in strangury. (O'Sh.)

CORRIGIOLA. (De Cand. iii. 366.)

*CORRIGIOLA LITTORALIS. (Linn.) (E. B. 668.) *Sand strapwort.*
Fl. whitish. July, August. Annual. Coast of Devon and Cornwall.
Herb cooling.

HERNIARIA. (De Cand. iii. 367.)

*HERNIARIA GLABRA. (Linn.) (E. B. 206.) *Herniaria alpestris.* (Aubry.) *H. fruticosa.* (Govan.) *Glabrous rupture-wort.*
Fl. green. June, August. Perennial. Rare. Lizard Point, Newmarket.
Rather saltish, astringent, diuretic; juice removes specks in the eye.

ILLECEBRUM. (De Cand. iii. 369.)

*ILLECEBRUM VERTICILLATUM. (Linn.) (E. B. 895.) *Whorled knot grass.*
Fl. white. July. Perennial. Marshy ground, Devon and Cornwall.
Refrigerant and astringent.

POLYCARPON. (De Cand. iii. 376.)

*POLYCARPON TETRAPHYLLUM. (Linn.) (E. B. 1031.) *Mollugo tetraphylla.* (Linn.) *Arenaria, Four-leaved allseed, Sea chickweed.*
Fl. greenish. May, September. Annual. Southern coasts.
Herb applied to whitlows.

SCLERANTHUS. (De Cand. iii. 378.)

*SCLERANTHUS ANNUUS. (Linn.) (E. B. 351.) *Knavel annuum,* (Scop.) *Annual knawel, German knot grass.*
Fl. greenish. July. Annual. Corn-fields.
Diuretic, astringent, the vapour arising from a decoction of it is used in the toothache.

*SCLERANTHUS PERENNIS. (Linn.) (E. B. 352). *Perennial knawel.*
Fl. greenish. August, October. Perennial. Dry sandy places.
Coccus polonicus is found upon its roots.

TRIANTHEMA (De Cand. iii. 351.)

TRIANTHEMA DECANDRA. (Linn.) *Zaleya decandra.* (Burm.) India.
Root aperient. (O'Sh.)

TRIANTHEMA OBCORDATA.
Root cathartic, given in powder to the extent of two tea-spoonsful twice daily, with a little ginger. (O'Sh.)

Order 73.—CRASSULACEÆ. (De Cand. iii. 381.)

Calyx consisting of many sepals, 3—20, more or less, concreted at the base, and therefore multipartite; *petals* equal in number to the sepals, alternate with them, and inserted into the base of the calyx, either free or concreted into a gamopetalous corolla, *stamens* inserted with the petals, either equal in number to, and alternate with, them, or double their number, those alternate with the petals longer and earlier, those opposite the petals shorter and later in arriving at perfection; *filaments* free, subulate; *anthers* oval, two-celled, dehiscing by a double chink; *nectariferous squamæ* at the base of the carpels solitary; *carpels* as many as the petals, and opposite to them, verticillated about an ideal axis, free, one-celled, dehiscing by a longitudinal chink at the inner angle; *seeds* fixed in a double row to the inner angle of the carpel; *albumen* thin, fleshy; *embryo* straight; *radicle* directed to the hilum. Succulent *herbs*, or *shrubs*, with entire or pinnatifid *leaves*, without stipules; *flowers* usually in cymes, sessile, often arranged unilaterally along the divisions of the cymes.

The thick juicy leaves are used outwardly as cooling and astringent applications; many of them contain malate of lime.

Sedum. (De Cand. iii. 401.)

*Sedum acre. (Linn.) (E. B. 839.) *Illecebra, Sedum minimum, Stone-crop, Wall pepper.*

Fl. yellow. June. Perennial. Walls, rocks, and sandy ground.

Emetic, cathartic, detersive, used in cancers and scrofula; antiscorbutic; externally rubefacient. (G.) Leaves acrid. This plant has been recommended in cancerous cases, and also in epilepsy. (L.)

*Sedum album. (Linn.) (E. B. 1578.) *Sedum minus, Lesser house-leek, Prick madam, White stone-crop.*

Fl. white. July. Perennial. Rocks in Somersetshire.

Cooling and astringent; used in salads.

Sedum Anacampseros. (Linn.) *Evergreen lesser house-leek.* South of France, &c.

Cedum cepæa. (Linn.) *Annual white house-leek.* South of Europe.

Equally cooling, astringent, and diuretic.

*Sedum Rhodiola. (D. C.) (E. B. 508.) *Rhodiola rosea.* (Linn.) *Sedum roseum.* (Scop.) *Rhodiola odorata.* (Lamb.) *Rhodia radix, Rose root, Rose wort.*

Fl. yellow. June. Perennial. Wet rocks on high mountains.

Root cephalic, astringent.

*Sedum Telephium. (Linn.) (E. B. 1319.) *Crassula, Fabaria telephium, Livelong orpine.*

Fl. purple. July. Perennial. Borders of fields and stony hedges.

Astringent, easing pain in fresh wounds or in old ulcers, eaten as a potherb, leaves a slight but disagreeable irritation in the throat. (G.) Refrigerant, and slightly astringent; leaves boiled in milk are recommended in diarrhœa. (L.)

Sempervivum. (De Cand. iii. 411.)

*Sempervivum tectorum. (Linn.) (E. B. 1320.) *Sedum majus*, (C. Bauh.) *Sempervivum, Common great house-leek.*

Fl. red. July. Perennial. Housetops, and on walls.

Cooling, astringent, used externally to corns. (G.) The leaves are

cooling when applied externally and frequently renewed; they possess. moreover, an astringent property, which is rather salutary in many cases; the dispensatory describes a beautiful, white, highly volatile coagulum, formed of the filtrated juice of these leaves with an equal quantity of spirits of wine. (L. ex Smith.)

UMBILICUS. (De Cand. iii. 399.)

*UMBILICUS PENDULINUS. (D. C.) (E. B. 322.) *Cotyledon umbilicus.* (Linn.) *Umbilicus veneris.* (Blackw.) *Navel-wort, Wall penny-wort, Kidney-wort*, has been recommended by Dr. Salter, and others, as a remedy for epilepsy. Used also for curing corns and warts.

Fl. yellowish green. June, August. Perennial. Rocks and walls.

Refreshing, detersive, cooling, very diuretic, useful in inflammations of the skin.

COTYLEDON ORBICULATA. Cape of Good Hope.

The fresh juice is of service in epilepsy. The leaves form an excellent application to hard corns. (Dr. Papper.)

ORDER 74.—FICOIDEÆ. (De Cand. iii. 415.)

Sepals definite, varying from 4—8, usually five, more or less combined at the base; either distinct from the ovary, or adherent to it, equal or unequal, with a quincuncial or valvate æstivation; *petals* sometimes wanting when the calyx is petaloid within, or numerous, inserted into the calyx, in many rows, opening beneath bright sunshine; *stamens* arising from the calyx, indefinite, free; *anthers* oblong, incumbent; *ovary* free or adnate to the calyx, many-celled; *stigmas* numerous; *capsule* either naked or surrounded by the fleshy calyx, many or five-celled, opening in a stellate manner at the apex; *seeds* numerous, very rarely solitary, fixed to the inner angle of the cells; *embryo* straight, curved, or spiral. Shrubby or herbaceous plants, with succulent, opposite, simple *leaves*; and usually terminal *flowers*.

MESEMBRYANTHEMUM. (De Cand. iii. 415.)

MESEMBRYANTHEMUM COPTICUM. (Linn.) Egypt.

Burned for barilla.

MESEMBRYANTHEMUM CRYSTALLINUM. (Linn.) *Ice plant.* Cape of Good Hope.

Contains acetate of potash: like the other species of this genus, it is very mucilaginous, and useful in inflammatory and bilious fevers.

MESEMBRYANTHEMUM EDULE. (Linn.) Cape of Good Hope.

Esculent.

MESEMBRYANTHEMUM NODIFLORUM. (Linn.) Egypt.

Used in the preparation of morocco leather, and burned for barilla.

REAUMURIA. (De Cand. iii. 456.)

REAUMURIA VERMICULATA. (Linn.) Sicily, Barbary, Egypt.

Exudes common salt mixed with saltpetre.

SESUVIUM. (De Cand. iii. 453.)

SESUVIUM PORTULACASTRUM. (Linn.) *Aizoon Canariense.* (Andr.) Mexico, Senegal, &c.

Used as a potherb.

Tetragonia. (De Cand. iii. 451.)

Tetragonia expansa. (Ait.) *Dimedovia tetragonoides.* (Pall.) New Zealand, Japan.

Antiscorbutic, cooling, used as a potherb.

Order 75.—CACTEÆ. (De Cand. iii. 457.)

Calyx consisting of numerous sepals, usually indefinite in number, and confounded with the petals, either crowning the ovary, or covering its whole surface; *petals* numerous, usually indefinite, arising from the orifice of the calyx, sometimes irregular; *stamens* numerous, indefinite, more or less cohering with the petals and sepals; *filaments* long, filiform; *anthers* ovate, versatile, bilocular; *ovary* obovate, fleshy, one-celled, with many ovules arranged upon a series of parietal placentæ, equal in number to the lobes of the stigma; *style* filiform; *stigmas* numerous, in some aggregate, in others spreading; *fruit* succulent, one-celled, many-seeded, either smooth, or covered with scales, scars, or tubercles; *seeds* at first parietal, when ripe, having lost their adhesion, nestling in the pulp of the fruit, ovate or obovate, without albumen; *embryo* either straight, curved, or spiral, with a short thick radicle; *cotyledons* flat, thick, foliaceous, sometimes almost obsolete in the leafless species. Succulent shrubs varying greatly in form; *stems* usually angular, two-edged or foliaceous; *leaves* almost always wanting, when present fleshy, smooth and entire, or spine-like; *flowers* either showy or minute, usually lasting only one day or night, always sessile.

Opuntia. (De Cand. iii. 471.)

Opuntia cochinillifera. (Mill.) *Cactus cochinillifera.* (Linn.) Warm parts of Amercia.

The food of the grana fina cochineal.

Opuntia ficus indica. (Haw.) *Cactus ficus indica.* (Linn.) South America.

The food of the grana sylvestria.

Opuntia vulgaris. (Mill.) *Cactus opuntia.* (Linn.) *Indian fig, Prickly pear.* Southern parts of North America.

Fruit sweetish, diuretic; plants very cooling; juice contains a red colouring principle, which colours the urine of those that eat the fruit.

Order 76.—GROSSULARIEÆ. (De Cand. iii. 477.)

Limb of the *calyx* superior, 4—5 partite, regular, coloured; *petals* 5—4, inserted into the throat of the calyx, alternating with its segments, equal; *stamens* 4—5, very rarely 6, inserted between the petals on the calyx, all of equal size; *filaments* conical, or cylindrical, free; *anthers* two-celled, dehiscing longitudinally and internally, (in some varieties of Ribes rubrum transversely and laterally;) *ovary* one-celled, *placentæ* two, opposite, parietal; *ovules* abundant; *style* one, 2—3—4 cleft; *fruit* succulent, subglobose, one-celled, crowned with the persistent calyx; *seeds* numerous, suspended by long filiform cords; outer integuments gelatinous or membranaceous, inner one a thin membrane closely adherent to the albumen; *albumen* horny; *embryo* minute, straight, placed in the narrow extremity of the seed; *radicle* obtuse. Prickly or unarmed *shrubs*, with alternate, lobed, and incised *leaves*.

Fruit eatable, acidulous and cooling.

Ribes. (De Cand. iii. 477.)

Ribes albinervium. (Michx.) North America.

RIBES ALPINUM. (Linn.) (E. B. 704.) *Tasteless mountain currant.*
Fl. yellowish. May. Small shrub. Woods, Yorkshire and Scotland.

RIBES FRAGRANS. (Pall.) Siberia.

RIBES MACROBOTRYS. (Ruiz. et Pav.) Woods on the Andes.

RIBES PUNCTATUM. (Ruiz. et Pav.) Peru.

RIBES VISCOSUM. (Ruiz. et Pav.) Chili.
Fruits eaten.

*RIBES NIGRUM. (Linn.) (E. B. 1291.) *Ribes olidum.* (Mönch.) *Black currants, Quinsy berries.*

Fl. greenish, tipped with purple externally. May. Small shrub. Wood and river sides; also cultivated.

Odour similar to that of bugs; leaves in infusion aperitive, diuretic, used in gargles; young leaves substituted for tea; fruit aperitive, used in calculous affections; the juice boiled made into wine. (G.) Fruit, leaves, and wood, tonic and stimulant; a juice prepared from the fruit is used in domestic medicine against catarrhs. (L.)

*RIBES RUBRUM. (Linn.) (E. B. 1289.) *Ribesia, Ribes, Red and white currants.*

Fl. greenish. May. Small shrub. Alpine woods in north of England and Scotland.

There are two varieties cultivated—

β. R. hortense, Red currant.

γ. R. album, White currant.

Red currants, *Garnet berries*, acid, cooling; juice of the fruit, with sugar, drank as lemonade or orgeat, and made into wine. *White currants*, fruit less acid; juice made into wine. (G.) Juice of the fruit refrigerant, very grateful to the parched palates of persons suffering from fever. (L.)

RIBES TRISTE. (Pall.) Siberia.
Berry black, used to colour wines.

*RIBES UVA CRISPA. (Linn.) *Ribes grossularia, Common gooseberry.*

Fl. pale purple. April, May. Small shrub. Hedges and thickets. A doubtful native.

Don, in his *Syst. Gard.* 3, p. 179, enumerates nearly two hundred varieties of cultivated gooseberries.

Berries used as a sauce for mackerel and other fish, astringent, but when very ripe laxative; make wine and vinegar; seeds, washed and roasted, substituted for coffee.

ORDER 77.—SAXIFRAGACEÆ. (De Cand. iv. 1.)

Sepals generally five, (rarely 3—7,) more or less united at the base; tube either more or less adnate to the ovary, or free; limb toothed or lobed, generally persistent; *petals* as many as the sepals, inserted into the tube of the calyx, alternating with its lobes, deciduous or persistent, rarely wanting; *stamens* inserted on the calyx, either equal in number to, and alternate with, the petals, or double their number, half being opposite to, and half alternate with, the petals; *filament* one, subulate; *anthers* ovate, bilocular;

ovary composed generally of two carpels, rarely of 3 or 5, concrete; *styles* as many as the carpels, therefore generally two, either distinct from the base, or more or less concrete, terminated by a capitate or a clavate stigma; *fruit* two-celled, dehiscing either by an opening from the base to the apex, or by one between the styles from the apex to the base; *seeds* minute, numerous; *albumen* fleshy; *embryo* small; *radicle* short, turned towards the hilum; *cotyledons* short, ovate. *Herbs* or *shrubs*.

Chrysosplenium. (De Cand. iv. 48.)

*Chrysosplenium alternifolium. (Linn.) (E. B. 54.) *Saxifraga aurea, golden saxifrage.*

Fl. yellow. March, April. Perennial. Moist places among rocks, in north of England.

*Chrysosplenium oppositifolium. (Linn.) (E. B. 490.) *Common golden saxifrage.*

Fl. yellow. May, June. Perennial. Sides of rivulets and springs.

Aperitive, diuretic, anti-asthmatic, and pectoral.

Heuchera. (De Cand. iii. 51.)

Heuchera Americana. (Linn.) *Heuchera viscida.* (Pursh.) *H. cortusa.* (Michx.) *American Sanicle.* North America.

Root, *Alum root*, *Heuchera*, *P. U. S.*, astringent; used externally in cancer. (G.) Root a powerful astringent. (L.)

Saxifraga. (De Cand. iv. 17.)

Saxifraga Cotyledon. (Linn.) *Narrow-leaved saxifrage.* North Europe.

*Saxifraga Geum. (Willd.) (E. B. 1561.) *Kidney-shaped saxifrage.*

Fl. cream-coloured, spotless. June. Perennial. Ireland.

*Saxifraga granulata. (E. B. 500.) *S. alba. White meadow saxifrage.*

Fl. white, large. May, June. Perennial. Hedgebanks, &c.

*Saxifraga tridactylites. (Linn.) (E. B. 501.) *Paronychia, Rue-leaved whitlow grass, Three-leaved saxifrage.*

Fl. white. May, June. Annual. On walls, common.

These, and most others of this genus, are aperitive, diuretic, useful in jaundice, obstructions, and scrofula. (G.)

Weinmannia. (De Cand. iv. 8.)

Weinmannia. *Red tan.*

Bark astringent, frequently mixed with that of the Loxa tree, or Peruvian bark. (G.) Used in Peru for tanning leather. (L.)

Order 78.—UMBELLIFERÆ. (De Cand. iv. 55.)

Calyx superior, adherent to the ovary, either entire, five-toothed, or obsolete; *petals* five, inserted on the top of the tube of the calyx, alternate with its lobes, sometimes entire, sometimes emarginate or bifid, usually inflexed at the point, involute, imbricate, rarely valvate in æstivation; *stamens* five, alternate with the petals, and inserted with them on the calyx; replicate in æstivation; *anthers* ovate, bilocular; *ovary* inferior, two-celled; *styles* two, generally persistent, thickened more or less at the base into a fleshy disk or stylopodia; *fruit* (called a diakenium or cremocarp) consisting of two

mericarps or carpels, separable from a common axis to which they adhere by their face (the commissure), each carpel traversed by five nerves or ridges, which are called primary, and occasionally with four alternate ridges, which are named secondary, the ridges are separated by interstices or channels, beneath which are often situated, in the substance of the pericarp, longitudinal canals or vittæ, containing a gummy, resinous, aromatic juice; *seed* solitary in the carpel, pendulous, usually adhering firmly to the pericarp; *albumen* large, fleshy, somewhat horny: *embryo* pendulous at the base of the albumen; *radicle* superior. Herbaceous *plants*, with fistular furrowed stems; *leaves* usually divided, sometimes simple, sheathing at the base; *flowers* in umbels, white, pink, yellow, or, blue, generally surrounded by an involucre.

ÆGOPODIUM. (De Cand. iv. 114.)

*ÆGOPODIUM PODAGRARIA. (Linn.) (E. B. 940.) *Trayoselinum Angelica.* (Lamb.) *Pimpinella angelicæfolia.* (Lamb.) *Ligusticum podagraria.* (Crantz.) *Seseli Ægopodium.* (Scop.) *Podagraria Ægopodium.* (Mönch.) *Sison podagraria.* (Spreng.) *Ash weed, Gout wort, Herb gerande.*

Fl. white, with purple anthers. May, June. Perennial. Gardens and wet places.

Roots and herbs used in the gout; young leaves used in salads.

ÆTHUSA. (De Cand. iv. 141.)

*ÆTHUSA CYNAPIUM. (Linn.) (E. B. 1192.) *Coriandrum Cynapium.* (Crantz.) *Cicuta cynapium.* (Targ.) *Cicutaria fatua, Fool's parsley, Lesser hemlock.*

Fl. white. June, August. Annual. Cultivated ground, very common.

Poisonous, liable to be mistaken for parsley, but is inodorous and insipid. (G.) The leaves are poisonous, producing nausea, vomiting, headache, giddiness, drowsiness, spasmodic pain, numbness, &c.; they are dark in colour, and nauseous in smell, which ought to prevent the mistaking of this plant for common parsley. (L.)

AMMI. (De Cand. iv. 112.)

AMMI MAJUS. (Linn.) *A. vulgare, Common bishop's weed.* Middle and south of Europe.

Fruit sold for that of Ammi verum.

AMMI VISNAGA. (Lamb.) *Daucus silvestris, D. visnaga.* (Linn.) *Visnaga daucoides.* (Gaertn.) *Wild carrot.* South of Europe.

Fruit diuretic, antipleuritic; rays of the umbel *Spanish toothpicks.*

ANETHUM. (De Cand. iv. 185.)

ANETHUM GRAVEOLENS. (Linn.) *Anethum minus.* (Gouan.) *Pastinaca Anethum.* (Spreng.) *Selinum Anethum.* (Roth.) *Anethum, Dill.* South of Europe.

Fruit discussive, galactopoietic, stopping vomiting and the hiccough; leaves ripen tumours. (G.) Fruit carminative and stimulant, taken with the food may be regarded as condimentary; it is used in the colic of children to relieve hiccough; it has also been supposed to promote the secretion of milk; *Aqua anethi* is chiefly employed; the fruit also yields by distillation a volatile oil. (L.)

ANETHUM SEGETUM. (L.) *Fœniculum dulce, Sweet fennel.* South of Europe.

Blanched stem used as a potherb; fruit carminative, used in soups; imported from Italy. (G.) See Fœniculum.

ANETHUM SOWA. (Roxb.) *Womum.* East Indies.

Fruit carminative. (G.) Fruit aromatic and carminative; used in the curries of the East Indies. (L.)

ANGELICA. (De Cand. iv. 167.)

ANGELICA ATROPURPUREA. (Linn.) *American Angelica, Angelica, P. U. S.* North America. Cordial, aphrodisiac.

ANGELICA NEMOROSA. Naples.

Root acrid, used as a remedy for the itch. (O'Sh.)

*ANGELICA SYLVESTRIS. (Linn.) (E. B. 1128.) *Selinum sylvestre.* (Crantz.) *Sel. angelica.* (Roth.) *Sel. pubescens.* (Mönch.) *Wild Angelica.*

Fl. white. July. Perennial. Moist places in woods and near rivulets. Cordial, aphrodisiac.

ANTHRISCUS. (De Cand. iv. 222.)

*ANTHRISCUS CEREFOLIUM. (Hoffm.) (E. B. 1268.) *Chærophyllum sativum.* (Lamb.) *Scandix cerefolium.* (Linn.) *Garden chervil.*

Fl. white. July. Annual. About gardens.

A common potherb, with eatable roots. (L.) Very resolving, diuretic, lithontriptic. (G.)

ANTHRISCUS CICUTARIA. (Duby.) *Chærophyllum cicutaria.* (Vill.) *Hemlock chervil.* The Alps.

Roots poisonous as well as the leaves.

*ANTHRISCUS SYLVESTRIS. (Hoffm.) (E. B. 752.) *Chærophyllum sylvestre.* (Linn.) *Cicutaria vulgaris, Cow-weed, Wild cicily.*

Fl. white. April, June. Perennial. Hedges, &c.; very common.

Strong smelling, acrid, diuretic, dyes woollen yellow and green. (G.) Recommended by Osbeck, in 1811, in the form of an extract in syphilitic complaints. Reputed to be similar in its effects to hemlock, only rather less narcotic. (L.)

*ANTHRISCUS VULGARIS. (Pers.) (E. B. 818.) *Scandix anthriscus, Common beaked parsley, Rough chervil.*

Fl. white. May, June. Annual. Waste places, common.

Deleterious. Some Dutch soldiers, who gathered it by mistake for common chervil, were poisoned by the soup into which it was put. (L. ex Burnett.)

APIUM. (De Cand. iv. 100.)

*APIUM GRAVEOLENS. (Linn.) *Seseli graveolens.* (Scop.) *Sium Apium.* (Roth.) *Sium graveolens.* (Vest.) *Apium. Eleoselinum, Celery, Smallage.*

Fl. greenish-white. August, September. Perennial. Marshy places, especially near the sea.

Root opening, diuretic, used in jaundice and the gravel; fruit more active; blanched stalks eaten in salads. (G.) When wild, growing in wet meadows and in ditches, it is acrid and poisonous; when culti-

vated in dry ground, and partially blanched, it is the celery well known as a salad. (L.)

ARCHANGELICA. (De Cand. iv. 169.)

*ARCHANGELICA OFFICINALIS. (Hoffm.) (E. B. 2561.) *Angelica Archangelica.* (Linn.) *Garden angelica.*

Fl. white. June, September. Biennial. Banks of Thames.

Root stomachic, carminative, aperitive, diaphoretic, useful in typhus fever; fruit aromatic. (G.) Root fragrant, bitterish, pungent, sweet when first tasted, but leaving a glowing heat in the mouth; the Laplanders extol it not only as food, but as medicine. In coughs, hoarseness, and other pectoral disorders, they eat the stalks roasted in hot ashes; they also boil the tender flowers in milk, till it attains the consistence of an extract, which they use to promote perspiration in catarrhal fevers, and to strengthen the stomach and bowels in diarrhœa. The leaves, seeds, and root, are certainly good aromatic tonics. (L. ex S. & C.) *Candied angelica, Caules angelicæ conditi;* the fresh stalks are boiled in water to take away the bitterness and some of the strong scent, then put into syrup, boiled to a candy height, taken out and dried; cordial, aphrodisiac. (G.)

ARCTOPUS. (De Cand. iv. 236.)

ARCTOPUS ECHINATUS. (Linn.) *Platdoorn,* or *Ziekte-troost* of the Boers. South Africa.

The root (Radix arctopi echinati) is used in South Africa as a substitute for sarsaparilla. It has been imported into this country in irregular pieces, formed by cutting the root transversely, and presenting somewhat the appearance of small and much-discoloured Calumba root. It has a weak bitter, somewhat acrid taste, causing a slight flow of saliva, and is almost devoid of odour. It is demulcent and diuretic, and is administered as decoction in lues, lepra, and for chronic eruptions of all kinds.

ARTEDIA. (De Cand. iv. 208.)

ARTEDIA SQUAMATA. (Linn.) *Gingidium, Oriental picktooth.*

Leaves diuretic, stomachic, used as a potherb, or eaten raw; rays of the umbel used as toothpicks.

ASTRANTIA. (De Cand. iv. 86.)

ASTRANTIA MAJOR. (Linn.) *Black mastor-wort.*

Roots acrid and purgative. (L.)

ASTRANTIA MINOR. (Linn.)

Roots of this and of the former used in scirrhus of the spleen and mania. (G.)

ATHAMANTA. (De Cand. iv. 154.)

ATHAMANTA CRETENSIS. (Linn.) *Daucus creticus.* Middle and south of Europe.

The fruits are aromatic, with a warm, agreeable flavour, and a smell like that of marjoram; they were used in the preparation of Diaphœnix, Venice treacle, and compound syrup of wormwood. (*Semina dauci cretici, officin.*) (L.) Fruit odorous, carminative, diuretic, anti-hysteric, and nervine. (G.)

ATHAMANTA MATTHIOLI. (Wulf.) *Seseli, Turbith?* Alps of Carinthia and Carniola.

Roots acrid, and purge upwards and downwards very violently.

BUBON. (De Cand. iv. 184.)

BUBON GALBANUM. (Linn.) *Selinum Galbanum.* (Spreng.) *Agasillis Galbanum.* (Spreng.) Cape of Good Hope.

Yields Galbanum. (G.) Valde dubium ex hac stirpe Galbanum hauriri. (De Cand.) Vide Galbanum.

BUPLEURUM. (De Cand. iv. 127.)

BUPLEURUM FRUTICOSUM. (Linn.) *Seseli æthiopicum, Shrubby hartwort.* South of Europe.

Fruit carminative, very acrid and odorous.

BUPLEURUM PERFOLIATUM. *Perfoliata, Thoroughwax.*

Vulnerary; used externally in tumours.

*BUPLEURUM ROTUNDIFOLIUM. (Linn.) (E. B. 99.) *Auricula leporis, Common hare's ear, Thoroughwax.*

Fl. yellow. July. Annual. Corn-fields on chalky soil.

This, and other species of the same genus, are aperitive, discussive, and diuretic.

CACHRYS. (De Cand. iv. 236.)

CACHRYS LIBANOTIS. (Linn.) Sicily, north of Africa.

Root very heating and detersive; used externally in piles.

CACHRYS ODONTALGICA. (Pall.) Siberia, the Crimea, &c.

Used in toothache. (G). The root excites salivation, and is said to cure pain in the teeth. (L.)

CARUM. (De Cand. iv. 114.)

CARUM BULBOCASTANUM. (Roch.) *Bunium Bulbocastanum.* (Linn.) *Sium Bulbocastanum.* (Spreng.) *Bunium minus.* (Gow.) *Scandix Bulbocastanum.* (Mönch.) Various parts of Europe.

Tuber, *Earth nut, Kipper nut, Pig nut, Haugh nut,* very nourishing, stimulant, useful in bloody urine, and spitting of blood. (G.)

*CARUM CARUI. (Linn.) (E. B. 1503.) *Carvi carum, Caraway.*

Fl. white. June. Perennial. Meadows and pastures.

Fruit, *Caraway seeds, Carui semina,* stomachic, carminative; root sweet, nourishing, and better eating than parsnips. (G.) Similar in action to dill and anise; used in the flatulent colic of children; the fruit or the oil obtained from it enters as an adjuvant or corrective into various officinal preparations, as the confection of opium, of rue, and of scammony, the compound tincture of cardamoms and of senna. (L. ex Pereira.)

CARUM NIGRUM. (L. Med. Bot. 38.)

Called *Zeera seeah,* is imported from Kunawur into India as a carminative. (L. ex Royle.)

CAUCALIS. (De Cand. iv. 216.)

*CAUCALIS DAUCOIDES. (Linn.) (E. B. 197.) *Conium Royeni.* (Linn.) *Caucalis leptophylla.* (Lamb.) *Daucus leptophyllus.* (Scop.) *Fine-leaved bastard parsley, Small bur parsley.*

Fl. white, tipped with red. June. Annual. Corn-fields on a chalky soil.

Diuretic.

CAUCALIS LEPTOPHYLLA. (Linn.) *C. humulis.* (Jacq.) *C. parviflora.* (Lamb.) Middle and south of Europe.

The same.

CHÆROPHYLLUM. (De Cand. iv. 224.)

*CHÆROPHYLLUM AROMATICUM. (Jacq.) (E. B. 2636.) *Broad-leaved chervil, Musk chervil.*

Fl. white. June. Perennial. Near Forfar, Scotland.

Very resolving, diuretic, lithontriptic.

CICUTA. (De Cand. iv. 99.)

CICUTA MACULATA. (Linn.) *Snake-weed.* United States.

A most dangerous poison resides in the roots; a drachm of the fresh root has killed a boy in an hour and a half, and in America, fatal accidents, arising from its being mistaken for other apiaceous plants, are not uncommon; has been used as a substitute for conium, with similar effect, except that it is more energetic. (L.)

*CICUTA VIROSA. (Linn.) (E. B. 479.) *Cicutaria aquatica.* (Lamb.) *Coriandrum cicuta.* (Roth.) *Sium cicuta.* (Vest.) *Sium crucæfolia, Cow-bean, Long-leaved water parsnip, Water hemlock.*

Fl. white. July, August. Perennial. Margin of watery places, not common.

Acrid, poisonous, especially the roots; emetic, and àcts upon the nervous system; used externally, powerfully resolvent, anodyne, and used in scrofulous and scirrhous tumours, and in inflammation of the penis; juices yellow, poisonous. (G.) A dangerous poison, producing effects similar to those of hydrocyanic acid; it appears to cause true tetanic convulsions in frequent paroxysms, and death on the third day. (Christison.) Haller considered it as the conium of the Greeks; it appears to be fatal to cattle. (L.)

CONIUM. (De Cand. iv. 242.)

*CONIUM MACULATUM. (Linn.) (E. B. 1191.) *Cicuta maculata.* (Lamb.) *C. major.* (Lamb.) *Coriandrum cicuta.* (Crantz.) *Coriandrum maculatum.* (Roth.) *Cicuta, κίονειον* (Dioscorid.) *Common hemlock.*

Fl. white. June, July. Biennial. Waste places, very common.

Very poisonous in warm countries, but less active in cold ones, powerfully narcotic; used in many obstinate disorders, as scirrhous cancer, chronic rheumatism, ill-conditioned ulcers, and glandular tumours; dose of the dried leaves, *Cicutæ folia, Conii folia,* in powder gr. j., gradually increased to ℈j., every four hours, to be exhibited with caution, especially when a fresh parcel of the powder is used. (G.) A powerfully narcotic acrid plant, occasioning stupor, delirium, palsy, and asphyxia; some authors state that it produces death with the most dreadful convulsions, but this is at variance with the accounts of Drs. Christison and Pereira. It is recommended in cancerous and scrofulous disorders, syphilis, dropsy, epilepsy, as an anodyne, &c. &c.;

it is said by Aretæus to be anti-aphrodisiac, by Störck and Bergius to be the reverse; the leaves are the parts usually employed, but the preparations from them are frequently inert: this may arise in part from the manner of preparing them, or from the time when they have been collected. Fothergill long since stated, what is quite comformable to theory, that conium was to be obtained in its most active state when the flowers are just past, the fruit forming, and the plant inclining to yellow, and that the quality of that collected when the herbage is strong and succulent is very inferior. (*Fothergill's Works*, 266.) Drs. Pereira and Christison recommend an alcoholic tincture of the bruised ripe fruit, instead of the leaves. (L.)

CORIANDRUM. (De Cand. iv. 250.)

*CORIANDRUM SATIVUM. (Linn.) (E. B. 67.) *Coriander.*

Fl. white. June. Annual. About Ipswich and in Essex.

Herb eaten as a salad too frequently occasions fatuity. (G.) Fruit carminative and aromatic; Cullen considered it as more powerfully correcting the odour and taste of senna than any other aromatic. (L.)

CRITHMUM. (De Cand. iv. 164.)

*CRITHMUM MARITIMUM. (Linn.) (E. B. 819.) *Crithmum, Herba sancti Petri, Fœniculum maritimum, Samphire.*

Fl. greenish white. August, September. Perennial. Sea-shore.

Excites the appetite; *Pickled samphire*, used for sauce.

CUMINUM. (De Cand. iv. 201.)

CUMINUM CYMINUM. (Linn.) *Cyminum cumin. Cumin.* Upper Egypt.

Fruit carminative, as in other plants of the order, but the smell disagreeable; chiefly used in veterinary surgery; combined with resin they make a warm stimulating plaster. (L.)

DAUCUS. (De Cand. iv. 209.)

*DAUCUS CAROTA. (Linn.) (E. B. 1174.) *D. nostras, D. vulgaris.* (Neck.) *Common carrot.*

Fl. white, with a dark purple abortive floret in the centre. July. Biennial. Fields, very common.

Roots, *Dauci radix*, saccharine, alimentary; used externally to carcinomatous and foul ulcers; a sugar is made from them. (G.) A poultice for correcting the fœtid discharge, allaying the pain, and changing the action of ill-conditioned, phagedænic, sloughing, and cancerous ulcers, is prepared from the root; fruit carminative, but supposed to act more particularly on the urinary organs. (L. ex Pereira.)

DAUCUS GINGIDIUM. (Linn.) Rocky shores of Corsica.

Properties same as

DAUCUS GUMMIFER. (Lamb.) Sea-coast of Sicily.

Yields one sort of *Opopanax*. (G.) The roots yield the *Bdellium siculum* of the old Pharmacopœias, according to Boccone; it has a bitter balsamic taste, and a weak but unpleasant odour.

N.B. De Candolle considers the plant thus called by Lamarck the same as our British Daucus maritimus, and reduces it as a synonym

to the D. hispanicus of Gouan; he then refers Boccone's Bdellium carrot to D. Gingidium, but Gussone, the greatest of all authorities concerning Sicilian plants, retains D. gummifer as a distinct species. (L.)

DOREMA. (Don in Linn. Trans. xvi. 601.)

DOREMA AMMONIACUM. Persia.

Stem and roots yield a great abundance of the fœtid gum resin *Ammoniacum;* its action is similar to that of assafœtida; it is chiefly employed as a discutient and expectorant. (L.) Also applied externally as a warm and stimulating plaster. (O'Sh.)

ERYNGIUM. (De Cand. iv. 87.)

ERYNGIUM AQUATICUM. (Linn.) *Button snake-weed.* North America.

Root, *Eryngium*, *P. U. S.*

*ERYNGIUM CAMPESTRE. (Dod.) (E. B. 718.) *Eryngo.* Middle and south of Europe.

Fl. blue, or yellowish. July, August. Perennial. Near Plymouth and Daventry; very rare.

Roots aphrodisiac, diuretic, sudorific, may be used for contrayerva. (G.) The root is sweet, aromatic, and tonic; Boerhaave reckons it as the first of aperient diuretic roots; it has been recommended in gonorrhœa, suppression of the menses, and visceral obstructions, particularly of the gall-bladder and liver; it has also the credit of being a decided aphrodisiac; a good deal of candied root is sold. (L.) *Candied eryngo*, *Radex eryngii condita;* roots slit, washed in cold water, and then put into syrup. (G.)

ERYNGIUM FŒTIDUM. (Linn.) *Stinking weed.* America.

Leaves in infusion anti-hysteric, either internally or in clysters. (G.)

*ERYNGIUM MARITINUM. (Linn.) *Sea eryngo*, or *Sea holly.*

Fl. blue. July, August. Perennial. Sea-shore.

Shoots boiled eaten as asparagus.

ERYNGIUM TRICUSPIDATUM. (Linn.) *Three-leaved eryngo.* South of Europe.

These two have similar properties to E. campestre, but in a less degree.

FERULA. (De Cand. iv. 171.)

FERULA ASSAFŒTIDA. (Linn.) *Assafœtida disgunensis.* (Kæmpfer.) *Hingisch*, *Narthex assafœtida.* (Falconer.) Persia.

Old roots yield assafœtida; young roots roasted and eaten; leaves eaten as greens; some fruits found in Sagapenum produced an unknown fecula. (G.) A fœtid, alliaceous, gum resin, is obtained by slicing the fleshy perennial roots; collecting the juice which exudes, and exposing it to the sun to harden; it is acrid, bitter, and antispasmodic. This is the most genuine assafœtida plant, which is hardly known to modern botanists; probably the same substance is yielded by other species of Ferula; as the Ferula persica. Professor Royle says he obtained two different fruits from the bazaars in India; see also Ferula persica and Ferula hooshee. Dr. Pereira is of opinion that the tear and lump Assafœtida of the shops are the produce of different

species. It was formerly considered to yield the Sylphium, or Laser of the ancients; this, however, seems to have been produced by the *Thapsia sylphion* (Viviani).

FERULA COMMUNIS. (Linn.) *F. femina.* (Plinii.) *F. nodiflora.* (Linn.) *Ferula, Fennel giant.* South of Europe.

Fruit carminative; green pith of the stem used in spitting of blood.

FERULA FERULAGO. (Linn.) *Ferula, F. galbanifera, F. nodiflora.* (Jacq.) Coasts of the Mediterranean.

Fruit found in Galbanum produced this plant. (G.) Yields abundantly a gum-resinous secretion, and was thought to produce Galbanum. See Galbanum officinale. (L.)

FERULA HOOSHEE. (L. Med. Bot. 46.) Beloochistan.

Resembles F. assafœtida in size and appearance, and has a gum, but it is not collected, and resembles the Opopanax of the European shops. (*Mrs. Macneil's Letter, Mar.* 1833.) Referred to in Professor Royle's Illustrations, p. 231, as resembling Opopanax; not, however, in the structure of the fruit, but in the quality of the produce. (L.)

FERULA ORIENTALIS. (Linn.) *F. ammonifera, Fashook,* Ἀμμωνιακόν, (*the drug,*) Ἀγασυλλις, (*the plant,*) *Dioscorid.* Asia Minor, Greece.

What is supposed to be this plant yields, in the state of Morocco, a gum resin similar to Ammoniacum, whence it has been thought to be really the origin of that substancé, and with good reason, so far as the drug of Dioscorides is concerned, for certainly there is no ground whatever for regarding Ammoniacum a corruption of Armeniacum, as Professor Don supposes; Dioscorides expressly points to the meaning of the word, when he says, γεννᾶται δέ ἐν Λιβυη κατα Ἄμμωνα, "It is produced in Libya, in the district of Ammon." Mr. Don seems, however, to have produced evidence of the Ammoniacum of the shops being obtained from a Persian plant. (See Dorema.) (L.)

FERULA PERSICA. (Willd.) *F. sagapenum.* Persia.

Also said to yield gum ammoniacum. (G.) This plant is said by Willdenow, Sprengel, and Fée, to produce sagapenum, but without sufficient evidence; Michaux sent its fruit from Persia as that of assafœtida; Nees and Ebermaier regard it as one of the plants yielding the latter substance, and probably with justice. (L.)

FERULA TINGITANA. (Linn.) Barbary.

Sprengel considers this as the *Silphion* of the ancients, from which the *Laser cyreniacum*, or *Asa dulces*, was produced; but Viviani asserts that F. Tingitana does not grow in the country of Cyrene, but only occurs more to the westward. (See Thapsia.) (L.)

FŒNICULUM. (De Cand. iv. 142.)

FŒNICULUM DULCE. (Bauh.) *Sweet fennel.* Italy, Portugal, &c.

Considered by the Italians as only a variety of the common fennel; oil of sweet fennel is obtained from the fruit. (L.) (*Vide* Anethum segetum.)

FŒNICULUM PANMORIUM. (D. C.) *Anethum panmori.* East Indies.

Used medicinally in India as a warm aromatic and carminative, in flatulent colic and dyspepsia. (L.)

*FŒNICULUM VULGARE. (Gaertn.) (E. B. 1208.) *Anethum fœniculum.* (Linn.) *Meum fœniculum, Common fennel.*

Fl. yellow. July, August. Perennial. Chalky cliffs near the sea.

Fruit aromatic, hot, carminative; roots opening; leaves diuretic; used as seasoning to fish. (G.) Oil of wild fennel is obtained from the fruit. (L.)

GALBANUM. (Don in Linn. Trans. xvi. 603.)

GALBANUM OFFICINALE. *Barzud,* (Arab.) *Biruja* (Hindoost.), the drug; *Kinneh* and *Naful,* the plant, according to Royle. Χαλβάνη. (Dioscorid.) Syria, according to Dioscorid.

The gum resin *Galbanum* is less powerful than assafœtida, but its action is of the same kind, and their uses the same; the drug comes from Smyrna and India. It would appear that the opinion of this drug being furnished by Bubon galbanum or Ferula ferulago is unfounded. (L.) (See *Opoidia.*)

HELOSCIADIUM. (De Cand. iv. 104.)

*HELOSCIADIUM NODIFLORUM. (Roch.) (E. B. 639.) *Sium nodiflorum.* (Linn.) *Creeping water-parsnip, Procumbent marsh-wort.*

Fl. white. July, August. Perennial. Sides of rivulets, &c.

Juice used in cutaneous diseases, dose for children three tea-spoonfuls twice a day, and for adults ℥iij. every morning.

HERACLEUM. (De Cand. iv. 191.)

HERACLEUM GUMMIFERUM.

Yields gum ammoniacum. (G.)

HERACLEUM GUMMIFERUM. (Willd. 312.) Supposed to be the same as H. pubescens. (De Cand. iv. 193.) Has been erroneously supposed to yield opopanax. (L.)

HERACLEUM LANATUM. (Michx.) *Master-wort.* North America.

Root, *Heracleum, P. U. S.,* emollient.

HERACLEUM PANACES? (Linn), and some other species are added to fermented liquors, and distilled by the northern nations.

*HERACLEUM SPHONDYLIUM. (Linn.) (E. B. 939.) *Sphondylium, Cow parsnip, Cow parsley.*

Fl. white, rayed. July. Biennial. Meadows and bushy places.

Root and leaves emollient; fruit a specific in hysteric spasms; juice renders the hair of the head curly; young shoots substituted for asparagus; exudes sugar. (G.) Rind and root acrid, and will ulcerate the skin on which they are applied; inside of the root eaten by the Kamschatdales; root contains sugar. (L.)

HYDROCOTYLE. (De Cand. iv. 59.)

HYDROCOTYLE ASIATICA. (Linn.) *Bevilacqua, Codagen, Pancaga, Pes equinum, Tamool of vullarey.*

Moist places of almost all the hot countries of the Eastern hemisphere, such as the Malay Islands, India, Ceylon, Central Africa, &c.

Used externally as a vulnerary, and internally as a diuretic, and

even as food. (Rumphius.) Given in infantile colic and fever, conjointly with fenugrec. (Ainslie.) Given internally as infusions, (half an ounce of dried herb to a pint,) and externally as a bath, containing three pounds of fresh herb, for leprosy. (Dr. Boileau.)

*HYDROCOTYLE VULGARIS. (Linn.) (E. B. 751.) *Marsh Pennywort, White rot.*

Fl. often tinged with red. May, June. Perennial. Bogs and marshes.

Properties the same as those of Eryngium, which see.

IMPERATORIA. (De Cand. iv. 183.)

*IMPERATORIA OSTRUTHIUM. (Linn.) *Imperatoria major.* (Moris.) *Selinum Imperatoria.* (Crantz.) *Peucedanum ostruthium.* (Roch.) *Angelica officinalis.* (Bernh.) (E. B. 1380.) *Astrantia, Imperatoria, Master-wort.*

Fl. white. Doubtful native. Banks of the Clyde.

Root very restorative after fatigue, formerly chewed by military officers and soldiers in forced marches, and other fatiguing duties. (G.) Root acrid and bitter, it is used as a masticatory in toothache, and many writers speak well of it as a febrifuge; Lango even affirms that it has cured agues which had resisted the influence of Peruvian bark. (L. ex Burnett.)

LAGOECIA. (De Cand. iv. 233.)

LAGOECIA CUMINOIDES. (Linn.) *Cuminum sylvestre, Wild cumin.* Greece, Persia.

Fruit carminative.

LASERPITIUM. (De Cand. iv. 204.)

LASERPITIUM GLABRUM. (Crantz.) *L. latifolium.* (Jacq.) Mountains of Europe.

The root is gorged with a gum-resinous juice, which is acrid, bitter, and even somewhat caustic; it is reckoned a violent purgative; the French call it *Turbith des montagnes*, and *Faux turbith.* (L. ex Fée.)

LASERPITIUM SILER. (Linn.) *Seseli, Siler montanum, Hart-wort.* Mountains in middle and south of Europe.

The roots of this, and of some other species, are employed in scrofula, spitting of blood, and piles. (G.)

LEVISTICUM. (De Cand. iv. 164.)

LEVISTICUM OFFICINALE. (Roch.) *Ligusticum levisticum.* (Linn.) *Lovage.* West of Germany, Transylvania.

Root, leaves, and fruit aromatic, stomachic, and diaphoretic; stem yields English opopanax.

LIBANOTIS. (De Cand. iv. 150.)

*LIBANOTIS VULGARIS. (D. C.) (E. B. 138.) *Athamanta libanotis.* (Linn.) *Gentiana nigra, Black gentian.*

Fl. white. August. Perennial. Chalky pastures. Rare.

Diaphoretic, diuretic; used in calculus.

MEUM. (De Cand. iv. 162.)

*MEUM ATHAMANTICUM. (Jacq.) (E. B. 2249.) *Æthusa meum.* (Linn.) *Athamanta meum.* (Linn.) *Meu, Meum, Baldmoney, Spignel.*

Fl. yellowish. June, July. Perennial. North of England.

Root gummy, resinous, carminative. (G.) The Μεον ἀθαμαντικον of Dioscorides; the roots are sweet and aromatic, something like carrot, and contain a small quantity of essential oil: they form an ingredient of Venice treacle. (Radix Mei, Officin.) (L.)

MEUM MUTELLINA. (Gaertn.) *Æthusa mutellina.* (Lamb.) *Œnanthe purpurea.* (Lamb.) *Phellandrium mutellina.* (Linn.) Subalpine meadows in middle of Europe.

Used like the last. (Radix Mutellinæ, Officin.) (L.)

MOLOPOSPERMUM. (De Cand. iv. 230.)

MOLOPOSPERMUM CICUTARIUM. (D. C.) *Ligusticum Peloponesiacum.* (Linn.) *Seseli peloponense.* (Diosc.) *Great broad-leaved hemlock.* Pyrenees, Alps, &c.

Root and fruit used in nervous diseases.

MYRRHIS. (De Cand. iv. 231.)

*MYRRHIS ODORATA. (Scop.) (E. B. 697.) *Scandixodorata.* (Linn.) *Sweet cicily.*

Fl. white. May, June. Perennial. Pastures in mountainous parts of England and Scotland.

Very resolving, diuretic, lithontriptic. (G.)

ŒNANTHE. (De Cand. iv. 136.)

*ŒNANTHE CROCATA. (Linn.) (E. B. 2313.) *Œ. cicutæ facia, Hemlock dropwort, Hemlock water-drop.*

Fl. white. July. Perennial. Watery places.

Acrid, poisonous, especially the roots, emetic, and acts upon the nervous system; used externally is powerfully resolvent, anodyne, and used in scrofulous and scirrhous tumours, and in inflammations of the penis; juices yellow, poisonous. (G.) A dangerously-poisonous plant, the cause of many fatal accidents; Dr. Christison considers it the most energetic of the narcotico-acrid apiaceæ; it is difficult to conceive how it should be mistaken for hemlock by the herb-gatherers, as Godefroi asserts; the roots are usually the parts eaten by those who fall victims to it, mistaking it for parsneps, ground nuts, or similar roots; it has been used in lepra and ichthyosis, and Dr. Hope found an infusion of the leaves useful in promoting the menstrual discharge. (L.)

*ŒNANTHE FISTULOSA. (Linn.) (E. B. 363.) *Common water dropwort.*

Fl. white. June, July. Perennial. Ditches and marshes.

*ŒNANTHE PHELLANDRIUM. (Lamb.) (E. B. 684.) *Œ. aquatica, Phellandrium aquaticum, Fine-leaved water dropwort.*

Properties same as Œ. crocata, but less poisonous.

*ŒNANTHE PEUCIDANIFOLIA. (Poll.) (E. B. 348.) *Parsley water dropwort, Sulphur weed, Water dropwort.*

Fl. white. June. Perennial. Bogs and ditches in midland counties.

*ŒNANTHE PIMPINELLOIDES. (Linn.) (E. B. 347.) *Parsley water dropwort.*

Fl. white. July. Perennial. Salt marshes.

Roots used as potherbs. (G.)

This genus contains twenty species according to De Candolle, and Fée reckons them all dangerous poisons, notwithstanding that the fleshy tubercles of *Œ. pimpinelloides* and *Œ. peucidanifolia* have occasionally been eaten. (L.)

OPOIDIA. (Endl. Gen. Pl. 1414.)

OPOIDIA GALBANIFERA. (Lind.) Persia.

The gum-resin, called *Galbanum*, is now considered to be derived from this plant.

OPOPANAX. (De Cand. iv. 170.)

*OPOPANAX CHIRONIUM. (Roch.) *Pastinaca opopanax.* (Linn.) *Ferula opopanax.* (Spreng.) Πανακες ἡρακλειον. (Dioscorid.) *Gum parsnep.* Dry hills, margins of fields, south of Europe.

Root yields by incision *opopanax.* (G.) A milky juice exudes from the root when wounded, and hardens into *opopanax*, a fetid gum-resin similar in its effects to assafœtida (L.), but much feebler. (O'Sh.)

PASTINACA. (De Cand. iv. 188.)

*PASTINACA SATIVA. (Linn.) (E. B. 556.) *P. hortensis*, *Parsnep.*

Fl. yellow. July, August. Biennial. Borders of fields and pastures in chalky soil.

Roots nutritive, but their strong smell renders them disageeeable to many; sugar and wine are made from them, fruit aromatic. (G.)

PETROSELINUM. (De Cand. iv. 102.)

*PETROSELINUM SATIVUM. (Hoffm.) (E. B. 2793.) *Apium petroselinum.* (Linn.) *P. vulgare.* (Lamb.) *Parsley.*

Fl. greenish white. July. Biennial. On old walls; a doubtful native.

Root diuretic, leaves used as a seasoning to meat, resolve coagulated milk in the breasts, but supposed to produce epilepsy and inflammation of the eyes; fruit carminative. (G.) The leaves are a pleasant stimulating salad, they are diuretic, and are at once recognised by their agreeable smell; Burnett says the fruit is a deadly poison to parrots. (L.)

*PETROSELINUM SEGETUM. (Roch.) (E. B. 228.) *Sison segetum.* (Linn.) *Corn hone-wort, Corn parsley.*

Fl. white or slightly reddish. August. Annual, Biennial. Moist fields on chalky soil.

Useful in indolent tumours.

PEUCEDANUM. (De Cand. iv. 176.)

*PEUCEDANUM OFFICINALE. (Linn.) (E. B. 176.) *Hog's fennel, Hore strange, Sulphur-wort, Sulphur-weed.*

Fl. yellow. July, September. Perennial. Salt marshes in Kent, Essex, and Sussex. Rare.

Root very diuretic, attenuant, expectorant, aperitive; wounded it exudes a gum resin. (G.) Juice of the root inspissated in the sun, or before the fire, is reputed antispasmodic and diuretic. (L.)

PEUCEDANUM OREOSELINUM. (Cusson.) *Athamanta Oreoselinum.* (Linn.) Open hills in middle of Europe.

The leaves and stem (*Herba oreoselini, officin.*) are bitter and aromatic, as is the fruit, but in a higher degree; they were used as powerful stimulants of the intestinal canal, and are still esteemed in some countries. (L.)

PEUCEDANUM MONTANUM. (Roch.) *Selinum palustre.* (Linn.) *Mountain parsley.* Marshes and boggy meadows in the north and middle of Europe.

The root abounds in a white, bitter, fetid juice, which hardens into a brown acrid resin; the Russians employ it as ginger; a famous remedy in Courland in epilepsy. (L. ex Rust's *Krit repert*, xii. 2, p. 281.

PEUCEDANUM SYLVESTRE. (D. C.) *P. palustre.* (Mönch.) *Athamantha flexuosa.* (Juss.) *A. Pisana.* (Savi.) *Selinum sylvestre, Milky parsley.* North and East of Europe.

Roots alexiterial.

PHYSOSPERMUM. (De Cand.) iv. 246.)

*PHYSOSPERMUM CORNUBIENSE. (D. C.) (E. B. 683) *Ligusticum cornubiense.* (Linn.) *Cornish lovage.*

Fl. white. July. Perennial. Near Bodmin, Cornwall.

Root exudes a resin.

PIMPINELLA. (De Cand. iv. 119.)

PIMPINELLA ANISUM. (Linn.) *Anisum officinale.* (Mönch.) *Sison anisum.* (Spreng.) Ἄνισον. (Dioscorid.) *Anise.* Egypt, Isle of Scio, the Levant.

Fruit cephalic, stomachic, carminative, diuretic, and emmenagogue; our summers not being sufficiently warm to ripen the seeds, they are usually imported. (G.) The officinal preparations, especially the aqua anisi, are employed to relieve flatulence, colicky pains, especially of children; nurses sometimes take it to promote the secretion of milk; it has also been used in pulmonary affections; its effects are condimentary, stimulant, and carminative. (L. ex. Pereira.)

*PIMPINELLA SAXIFRAGA. (Linn.) *P. crispa* (Horn.) *Tragoselinum minus.* (Lamb.) *Tragoselinum saxifragum.* (Mönch.) (E. B. 407.) *Common Burnet saxifrage.*

Fl. white or slightly reddish. July, August. Perennial. Dry pastures.

Root, chewed, relieves the toothache; fruit opening, detersive, and lithontriptic. (G.) Root astringent, used as a masticatory to relieve toothache, and in decoction to remove freckles. (L. ex Burnett.)

PIMPINELLA DISSECTA and P. MAGNA (Linn.) have similar properties.

PRANGOS. (De Cand. iv. 239.)

PRANGOS PABULARIA (Linn.) *Fiturasulioon.* North of India.

Leaves dried and eaten by cattle as winter fodder, its effects heating, producing fatness quickly; destructive of the Fasciola hepatica in sheep. (L. ex Moorcroft.)

PTYCHOTIS. (De Cand. iv. 107.)

PTYCHOTIS AJOWAN. (D. C.) *Adjowaen, Daucus copticus, Bubon copticum, Ligusticum adjowan.* (Roxb.) India.

Fruit carminative, imported from the East Indies. (G.)

The fruit has an aromatic smell, and a warm pungent taste; one of the most useful and grateful of the umbelliferous tribe; an excellent remedy in flatulent colic; much used in India. (L. ex Roxb.)

PTYCHOTIS COPTICA. (D. C.) *Daucus copticus.* (Pers.) *Bunium copticum.* (Spreng.) *Trachyspermum copticum.* (Link.) *Ammi copticum.* (Linn.) Egypt and Candia.

Has similar properties.

PTYCHOTIS HETEROPHYLLA. (Roch.) *Sesili saxifragum.* (Linn.) South of Europe.

Roots purgative, not so acrid as the Thapsiæ, or as Athamanta mathioli.

PTYCHOTIS INVOLUCRATA. India.

Used by Europeans in India as a substitute for parsley. (L. ex Royle.)

PTYCHOTIS SYLVESTRIS. India.

An Indian carminative. (L. ex Royle.)

SANICULA. (De Cand. iv 84.)

*SANICULA EUROPÆA. (Linn.) *S. officinarum.* (Bauh.) *S. officinalis.* (Gouan.) *Astrantia dispensia.* (Scop.) *Caucalis sanicula.* (Crantz.) (E. B. 98.) *Wood sanicle.*

Fl. white. May, June. Perennial. Woods and thickets.

Leaves vulnerary, cleansing.

SCANDIX. (De Cand. iv. 220.)

*SCANDIX PECTEN VENERIS. (Linn.) (E. B. 1397.) *Pecten veneris, Shepherd's needle, Venus' comb.*

Fl. white. May, June, Annual. Corn-fields.

Young shoots eaten raw or boiled.

SELINUM. (De Cand. iv. 165.)

SELINUM CARVIFOLIA. (Linn.) *S. membranaceum.* (Vill.) *S. pseudocarvifolia.* (All.) *Angelica carvifolia.* (Spreng.) *Laserpitium selinoides.* (Scop.) *Mylinum carvifolia.* (Gaudin.) Europe.

Roots alexiterial.

SESELI. (De Cand. iv. 144.)

SESELI MONTANUM. (D. C.) *Bastard spignel.* Hills in France.

Roots purgative, not so acid as the Thapsiæ, or as Athamanta mathioli.

SESELI LEUCOSPERMUM. (Waldst.) *Athamanta leucospermum.* (Poir.) Pannonia.

Root resinous, aromatic.

SESELI HIPPOMARATHRUM. (Linn.) *Sium Hippomarathrum.* (Roth.) *Seseli articulatum.* (Crantz.) Alsatia, Germany.

SESELI TORTUOSUM. (Linn.) *French hart-wort.* South of France.

Seeds stomachic, aperitive; roots anti-asthmatic.

SILAUS. (De Cand. iv. 161.)

*SILAUS PRATENSIS. (Bess. et Roch.) (E. B. 2142.) *Peucedanum silaus.* (Linn.) *Saxifraga vulgaris, Meadow pepper saxifrage.*

Fl. yellowish. July, September. Perennial. Pastures and meadows. Root aperitive, used in calculous cases.

SISON. (De Cand. iv. 110.)

*SISON AMOMUM. (Linn.) (E. B. 954.) *Sium Amomum.* (Roth.) *Sium aromaticus.* (Lamb.) *Seseli amomum.* (Scop.) *Cicuta Amomum.* (Crantz.) *Symrnium heterophyllum.* (Mönch.) *Amomum vulgare, Common amomum, Bastard stone parsley, Hone-wort.*

Fl. cream-coloured. August. Biennial. Moist ground on a chalky soil.

Fruit warm, aromatic, used in Venice treacle. (G.) Fruit pungent and aromatic, but has a nauseous smell of bugs when fresh; it formed the *Semen amomi* of the old apothecaries. (L.)

SIUM. (De Cand. iv. 124.)

*SIUM ANGUSTIFOLIUM. (Linn.) (E. B. 139.) *Berula angustifolia,* (Roch.) *Sium berula? Narrow-leaved water parsnep, Upright water parsnep.*

Fl. white. July, August. Perennial. Watery places.

*SIUM LATIFOLIUM. (Linn.) (E. B. 204.) *Pastinaca aquatica, Broad-leaved water parsnep, Great water parsnep.*

Fl. white. July, August. Perennial. Watery places.

Root poisonous; leaves aperitive, diuretic, antiscorbutic. (G.)

SIUM SISARUM. (Linn.) *Sisarum, Skirret.* China, Japan, &c.

Root used as a potherb, stomachic, a specific against the bad effects of quicksilver; sugar is made from it.

Var. β. *Ninsi, Sium ninsi, Ninsi, Ninzen, Nin sing.* China and East Indian islands.

Alexiterial and aphrodisiac, and thought to lengthen life; frequently confounded with ginseng, as in the *Pharm. Lond.* 1720.

SMYRNIUM. (De Cand. iv. 247.)

*SMYRNIUM OLUSATRUM. (Linn.) (E. B. 230.) *S. Mathioli.* (Tourn.) *Hipposelinum, Smyrnium, Alexanders.*

Fl. yellowish green. May, June. Biennial. Waste grounds, among ruins near the sea.

Root and herb opening, emmenagogue. (G.) Leaves pleasantly aromatic; fruit stimulant and stomachic. (O'Sh.)

THAPSIA. (De Cand. iv. 202.)

THAPSIA ASCLEPIUM. (Linn.) *T. Apulia.* (Mill.) Apulia, Sicily.

THAPSIA GARGANICA. (Linn.) South of Europe.

Roots acrid, and purge upwards and downwards very violently. (G.)

The variety γ of the latter of these is found on the mountains of Cyrene, and is the T. silphion of Viviani. (Fl. Lybica, p. 17.) The *Laser cyrenaicum,* or *Asa dulces* of Cyrene, was a drug in high reputation among the ancients for its medicinal uses; it had miraculous powers assigned to it; to neutralize the effects of poison, to cure envenomed wounds, to restore sight to the blind, and youth to the aged, were only a part of its reputed properties; it was also reckoned antispasmodic, deobstruent, diuretic, &c. So great was its reputation,

that the princes of Cyrene caused it to be struck on the reverse of their coins, and the Cyrenean doctors were reckoned among the most eminent in the world; its value was estimated by its weight in gold; although such extravagant powers were ascribed to it, there can be no doubt that it possessed some very active principles, and accordingly it has always been a point of much interest to determine what the plant was; it has been successively referred to Opopanax, to Ferula tingitana, to Laserpitum siler, and gummiferum, and to Thapsia asclepium; but the discovery of Cyrene by Della Cella seems to set the question at rest; it is the only umbelliferous plant inhabiting those regions which will at all answer to the figure struck on the Cyrenean coins, and this agrees as well with such rude representations as can be expected from any plant. While, however, it may be considered certain that the Silphion of Cyrene was yielded by Thapsia silphion, it by no means follows that all the Silphion was from that species; on the contrary, Pliny (*Hist. Nat.* lib. xxii. c. 23) expressly states, that in his time it was chiefly imported from Syria, the worst kind being the Parthian, the Median of better quality, and that of Cyrene altogether lost. (L.)

THAPSIA VILLOSA. (Linn.) South of Europe.

Root purgative; may be used for jalap.

TORDYLIUM. (De Cand. iv. 197.)

*TORDYLIUM OFFICINALE. (Linn.) (E. B. 2440.) *Small hart's wort.*

Fl. white, with large rays. June, July. Annual. Doubtful native.

Roots and fruit diuretic.

TORILIS. (De Cand. iv. 218.)

*TORILIS ANTHRISCUS. (Gmel.) (E. B. 987.) *Caucalis Anthriscus.* (Scop.) *C. aspera.* (Lamb.) *Torilis rubella.* (Mönch.) *Caucalis minor, Tordylium anthriscus.* (Linn.) *Hedge parsley, Hen's foot.*

Fl. white, with a reddish tinge. July. Annual. Hedges and waste places.

Roots and fruit diuretic.

TRINIA. (De Cand. iv. 103.)

TRINIA VULGARIS. (D. C.) Var. β. *Sesili glaucum, Glabrous hone-wort.*

Fl. white. May, June. Perennial. Limestone rocks.

Roots purgative, not so acrid as Athamanta mathioli, or the Thapsiæ.

ORDER 79.—ARALIACEÆ. (De Cand. iv. 251.)

Tube of the *calyx* adnate to the ovary, limb entire or toothed; *petals* 5—10, alternate with the teeth of the calyx, valvate in æstivation, very rarely wanting, and then (in Adoxa) perhaps converted into stamens; *stamens* as many as the petals, rarely double their number, inserted into the margin of the large epigynous disc; *anthers* two-celled, peltate; *ovary* adnate to the calyx, composed of two, or many one-seeded cells; *styles* many, simple, either distinct and diverging, or concreted into one (rarely none); *stigmas* simple; *berry* 2—15 celled, crowned by the entire or dentate limb of the calyx,

cells equal in number to the styles, one-seeded; *seeds* angular, erect; *testa* crustaceous; *endopleura* membraneous; *embryo* small, inverted, surrounded by a copious fleshy albumen. *Trees*, *herbs*, or *shrubs*, sometimes climbing or adhering by root-like fibrillæ; *leaves* alternate, exstipulate, petiolated, simple, or variously compounded; *petioles* long, often dilated and thickened at the base; *flowers* axillary or terminal, more or less umbelled.

ARALIA. (De Cand. iv. 257.)

ARALIA HISPIDA. (Michx.) *Wild elder. Dwarf elder.* Virginia and Pennsylvania.

Sudorific.

ARALIA NUDICAULIS. (Linn.) *False sarsaparilla. Wild sarsaparilla, Small spikenard.* North America.

A gentle stimulant and diaphoretic, used in rheumatism, syphilis, and cutaneous affections, in the same way as common sarsaparilla.

ARALIA RACEMOSA. (Linn.) *American spikenard.* North America.

Roots bitter. (G.) The first is alterative and tonic, and is considered by the American writers to be as valuable a medicine as sarsaparilla. (L.)

ARALIA SPINOSA. (Linn.) *Angelica tree. Toothache tree*, sometimes called *Prickly ash.* North America.

Bark astringent; berries used in rheumatism and colic. (G.) A tincture of the wood is also employed to allay the spasms in colic. (L.)

HEDERA. (De Cand. iv. 261.)

*HEDERA HELIX. (Linn.) (E. B. 126.) *Common ivy.*

Fl. pale green. October, November. Large shrub. Trees, rocks, &c.

Leaves used internally in atrophy, and to dress issues; also boiled in wine as a wash to kill vermin; berries purge; the trunk yields a gum resin. (G.) It is also mentioned as a sodorific, and was once reputed to prevent drunkenness, and to dissipate the effects of wine. (L.)

HEDERA UMBELLIFERA. (D. C.) *Aralia umbellifera.* (Lamb.) Mountains of Amboyna.

Yields a blackish or dull-brown resin, with a very powerful aromatic camphorated smell. (L.)

PANAX. (De Cand. iv. 252.)

PANAX FRUTICOSUM. (Linn.) *Scutellaria tertia.* (Rumph.) Ternate, Java.

Herb diuretic.

PANAX MOROTOTONI. (Aubl.) *P. undulata.* (Pers.) Cayenne.

Wood, bark, leaves, flowers, and fruit aromatic.

PANAX QUINQUEFOLIUM. (Linn.) *Ginseng.* China and North America.

Root cordial, alexiterial, and aphrodisiac, dose ʒj.—ij.; chewed, or sliced and made into tea, often confounded with *nin sing.* (G.) Root an agreeable bitter sweet, with some aromatic pungency; has a prodigious reputation among the Chinese as a stimulant and restorative, under the name of "Ginseng;" by Europeans and Americans considered nothing more than a demulcent approaching liquorice in its properties; this, however, requires further investigation, for we cannot believe that all the Chinese say, believe, and practise, is fabulous or imaginary. (L.)

Order 80.—CORNEÆ. (De Cand. iv. 27.)

Calyx of four sepals, united together into a tube, adnate to the ovary, limb four-lobed; *petals* four, oblong, broad at the base, inserted into the upper part of the tube of the calyx, regular, valvate in æstivation; *stamens* four, inserted with the petals and alternate with them; *anthers* ovate, oblong, bilocular; *style* filiform; *stigma* simple; *drupe* baccate, crowned by the remains of the calyx, having a bilocular nut; *seed* solitary, pendulous in the cells; *albumen* fleshy; *radicle* superior, shorter than the two oblong cotyledons. *Trees and shrubs*, rarely *herbs; leaves* (excepting in one species) opposite, whole, or toothed: *flowers* capitate, umbellate, or corymbose, naked, or with an involucre, rarely by abortion diœcious; *fruit* edible.

Cornus. (De Cand. iv. 271.)

Cornus circinata. (L'Her.) *C. tomentosula.* (Michx.) *C. rugosa.* (Lamb.) *Round-leaved dogwood.* America.

Bark of root used as a poultice. (G.) Has been recommended in diarrhœa. (L.)

Cornus florida. (Linn.) *American dog-wood.* North America.

Bark a powerful bitter, with an astringent and somewhat aromatic taste; it acts as a tonic, astringent, and antiseptic, approaching Cinchona in its general effects, and not inferior to it in the cure of intermittents. (Bigelow.) The young branches stripped of their bark, and rubbed with their ends against the teeth, render them extremely white; from the bark of the roots the Indians extract a good scarlet colour. (Barton.) (L.)

**Cornus mas. (Linn.) *C. mascula.* (L'Her,) *Cornelian cherry, Male cornel.*

Fl. yellow. February, March. Small tree. Europe.

Fruit edible, very astringent, useful in loosenesses. (G.) Bark has been employed with great success in intermittent fevers. (O'Sh.)

*Cornus sanguinea. (Linn.) (E. B. 249.) *Cornus fœmina.* (Lob.) *Dog-wood, Gutter tree, Wild cornel.*

Fl. white. June. Large shrub. Hedges, &c

Seeds yield oil, as well as those of the former species; wood used for making charcoal for gunpowder. (G.) Flavour of oil very agreeable; a good substitute for olive oil. (O'Sh.)

Cornus sericea. (L'Her.) *C. cærulea.* (Lamb.) *C. lanuginosa.* (Michx.) *Swamp dog-wood.* Moist woods in the United States.

Said to be one of the best tonics in North America, nothing having been found in the United States that so effectually answers the purpose of Peruvian bark in intermittent fevers. (L. ex. Barton.)

*Cornus Suecica. (Linn.) (E. B. 310.) *C. herbacea.* (Linn.) *Dwarf cornel.*

Fl. dark purple. July, August. Perennial. Alpine pastures.

Is reputed to have tonic berries, which increase the appetite, whence its Highland name *Lus-a-chrasis*, or plant of gluttony. (L.)

Order 81.—LORANTHACEÆ. (De Cand. iv. 277.)

Flowers hermaphrodite, or of different sexes; tube of the *calyx* surrounded at the base by scales, and adnate to the ovary: limb short, entire or lobed; *petals* 4—8, free, or more or less coherent, valvate in æstivation; *stamens* as many as the petals, and

opposite to them; *filaments* more or less adnate to the corolla, or wanting; *style* filiform or none; *stigma* capitate; *berry* one-seeded; *seed* surrounded by a membraneous integument; *albumen* fleshy; *radicle* superior, thickened or truncated at the apex. Generally parasitical plants, with opposite, more or less fleshy, entire *leaves*.

Bark astringent; berries contain a principle analogous to caoutchouc, called *bird-lime*.

LORANTHUS. (De Cand. iv. 286.)

LORANTHUS EUROPÆUS. (Linn.) *Viscum quercinum, Mistletoe of the oak.*

Esteemed a sacred plant by our ancestors, hence extirpated by them, but still found plentifully on the oaks in those parts of Europe where the druidical religion was not established; the common mistletoe, which is rarely found on the oak, is still used as a substitute for it in medicine, and also to deck our churches and preserve our homes from evil spirits.

VISCUM. (De Cand. iv. 277.)

*VISCUM ALBUM. (Linn.) (E. B. 1470.) *Viscum mistletoe, Mistletoe.*

Fl. yellowish. May. Small shrub. Parasite on apple and thorn trees, and on the oak near Basingstoke, &c.

Berries very purgative, used to make bird-lime; leaves anti-epilectic, in doses of ℈j. to ʒj. twice a-day.

ORDER 82.—CAPRIFOLIACEÆ. (De Cand. iv. 321.)

Calyx consisting of five (rarely four) sepals, coherent in a tube, adnate to the ovary; *corolla* inserted into the calyx, gamopetalous, or of as many petals as there are lobes of the calyx, more or less united at the base, sometimes irregular, not valvate in æstivation; *stamens* inserted into the calyx, adnate to the base of the corolla, equal in number to, and alternate with, the lobes of the corolla; *style* exserted or none; *stigmas* 1—3; *berry* generally crowned by the limb of the calyx, one or many celled, cells one, many-seeded, spermoderm, crustaceous; *embryo* in the centre of the albumen, which is fleshy; *radicle* superior; *cotyledons* ovate, oblong. *Shrubs* with opposite, or alternate exstipulate *leaves*; *flowers* generally corymbose, sometimes terminal or axillary.

LINNÆA. (De Cand. iv. 340.)

*LINNÆA BOREALIS. (Linn.) (E. B. 433.) *Two-flowered linnæa.*

Fl. rose-coloured, yellowish within, fragrant. May, June. Perennial. Northumberland; rare.

Used in rheumatism and gout; astringent and diuretic.

LONICERA. (De Cand. iv. 330.)

*LONICERA CAPRIFOLIUM. (Linn.) (E. B. 799.) *Peryclimenum Italicum.* (Mill.) *Caprifolium hortense.* (Lamb.) *C. rotundifolium.* (Mönch.) *C. Italicum.* (Rœm.) *Honeysuckle, Pale perfoliate honeysuckle.*

Fl. yellowish. June. Climbing shrub. Oxfordshire and Cambridgeshire; rare.

*LONICERA PERICLYMENUM. (Linn.) (E. B. 800.) *Caprifolium, Matrisylva, Periclymenum, Common honeysuckle, Woodbine.*

Fl. buff-coloured, externally red. June, October. Climbing shrub. Woods and hedges; common.

Leaves used in detersive gargles; flowers anti-asthmatic.

SAMBUCUS. (De Cand. iv. 321.)

SAMBUCUS CANADENSIS. (Linn.) *American elder.* North America.

Berries, *Sambucus, P. U. S.*, used as those of Sambucus nigra.

*SAMBUCUS EBULUS. (Linn.) (E. B. 475.) *Dwarf elder, Dane wort, Ebulus.*

Fl. white. July. Perennial. Waysides and waste places.

Root ʒjss, a strong purge; leaves used in poultices for the gout and piles; berries used to dye blue, and also to make wine.

*SAMBUCUS NIGRA. (Linn.) (E. B. 475.) *Sambucus, Common elder.*

Fl. cream-coloured. June. Small tree. Coppices and hedges.

Inner bark, gr. v. to ʒj., very active, antihydropic; leaves a nauseous purgative; flowers diaphoretic, useful in disorders of the chest, discussive and attenuant; berries used to flavour sugar and wine, poisonous to poultry; dry berries, *Grana actes*, useful in dropsy. (G.) Inner bark purgative, in large doses emetic: flowers employed in French pharmacy as expectorants. (L.)

SAMBUCUS NIGRA VIRESCENS. *White-berried elder.* Var β. of S. nigra. (D. C.)

Flowers used to give wine the flavour of Frontignac.

SAMBUCUS RACEMOSA. (Linn.) *Mountain elder.* Middle and south of Europe.

Narcotic.

TRIOSTEUM. (De Cand. iv. 329.)

TRIOSTEUM PERFOLIATUM. (Linn.) *T. majus.* (Michx.) *Fever root, Wild ipecac.* United States.

Root, *Triosteum, P. U. S.*, emetic, and cathartic; bark of the root bitter, tonic. (G.) Leaves diaphoretic, efficacy impaired by age, should be kept in closely-stopped jars, and renewed annually. (L.)

VIBURNUM. (De Cand. iv. 323.)

VIBURNUM CASSINOIDES. (Linn.) *Cassine peragua, Perygua, Cashioberry bush.* North America.

Leaves purgative, sometimes emetic or diaphoretic, used as a specific in diabetes.

*VIBURNUM LANTANA. (Linn.) (E. B. 331,) *Mealy guelder rose, Pliant mealy tree, Wayfaring tree.*

Fl. White. June. Large shrub. Woods and hedges on chalky soil.

Berries drying, astringent; bark of root made into bird-lime.

*VIBURNUS OPULUS. (Linn.) (E. B. 332.) *V. lobatum.* (Lamb.) *Opulus glandulosus.* (Mönch.) *Common guelder rose.*

Fl. white, outer ones abortive, large. June, July. Large shrub. Woods and coppices; common.

Leaves and berries refreshing, and used in astringent gargles.

**VIBURNUM TINUS. (Linn.) (Bot. Mag. 38.) *Laurestinus, Wild bay.*

Fl. white, tinged with pink. December, March. Large shrub. Native of south of Europe.

Berries purge violently.

Order 83.—RUBIACEÆ. (De Cand. iv. 381.)

Calyx adhering to the tube of the ovary, 4—5, rarely six-lobed; *corolla* gamopetalous, inserted into the upper part of the tube of the calyx, with 4—5, rarely 3—8 lobes, cohering variously, twisted or valved in æstivation; *stamens* equal in number to the segments of the corolla, alternate with them, and more or less adnate with its tube; *anthers* oval, two-celled, bursting inwardly; *ovary* within the calyx, and united with it, usually two, or many-celled, rarely one-celled, crowned with a fleshy urceolus or calycine limb; *style* single, springing from the urceolus; *stigmas* generally two, distinct, or more or less united; *fruit* baccate, capsular, or drupaceous, two or many celled, cells 1—2, or many-seeded; *seeds*, in the cells containing but one, fixed by the apex, or more generally by the base; in those which contain many, generally horizontal, and attached to a central placenta; *albumen* large, horny, or fleshy; *embryo* straight, or slightly curved, imbedded in the centre of the albumen, with a terete radicle turned towards the hilum; *cotyledons* foliaceous. *Trees*, *shrubs*, or *herbaceous plants*, with simple, very entire, opposite, rarely verticillate *leaves*, generally bistipulate; *flowers* small, rotate, or tubulose.

Antirrhœa. (De Cand. iv. 459.)

Antirrhœa verticillata. (D. C.) *A. borbonica.* (Gmel.) *Cunninghamia verticillata.* (Willd.) *Malanea verticillata.* (Lamb.) Isles of Bourbon and Mauritius.

Root and bark said to be powerfully astringent. In Bourbon it is employed as a styptic to restrain hæmorrhage, and is known by the name of *Bois de Losteau.* (L.)

Asperula. (De Cand. i. 581.

Asperula arvensis. (Linn.) *A. cærulea.* (Dod.) *A. ciliata.* (Mönch.) *A. dubia.* (Willd.) *Field woodruff.*

Fl. blue. July. Annual. Corn-fields near Devonport.

Asperula tinctoria. (Linn.) *Galium tinctorium.* (Scop.) Europe.

Roots dye red; herbs opening.

*Asperula cynanchica. (Linn.) (E. B. 33.) *Rubia cynanchica. Squinancy wort.*

Fl. white, or blush coloured. June, September. Perennial. On chalk downs.

Used externally in quinsy.

*Asperula odorata. (Dod.) (E. B. 755.) *Asperula, Sweet woodruff.*

Fl. white, odorous. May, June. Perennial. Woods.

Hepatic and deobstruent internally; antipsoric externally. (G.) Also reckoned diuretic. (L.)

Borreria. (De Cand. iv. 540.)

Borreria ferruginea. (D. C.) *Spermacoce ferruginea.* (St. Hil.) *Spermacoce globosa.* (Pohl.) Brazil.

Root emetic. (L.)

Borreria poaya. (D. C.) *Spermacoce poaya.* (St. Hil.) Brazil.

Root emetic, substituted for ipecacuanha; leaves at first sweet, but afterwards acrid; a decoction of them used in the cure of colic.

Buena. (De Cand. iv. 356.)

Buena hexandra. (Pohl.) *Cinchona hexandra, Cosmibuena hexandra.* Brazil.

An indifferent sort of fever-bark is produced by this tree; M. Guibourt thinks it may be what has been known in common as *Quinquina colorada;* he received the latter under the name of *Brazilian quinquina.* It contains a very little cinchonine, is thin, blood-coloured within, very bitter. (L.)

BUENA OBTUSIFOLIA (D. C.) *Cinchona grandiflora.* (Ruiz et Pav.) *Cosmibuena obtusifolia.* (Ruiz et Pav.)

Bark slightly febrifuge.

CANTHIUM. (De Cand. iv. 473.)

CANTHIUM PARVIFLORUM. (Lamb.) *Webera tetrandra.* (Willd.) India.

Root bitter, red. (G.) A decoction of the leaves used in certain stages of flux, is also anthelmintic; bark and young shoots used in dysentery. (L. ex Ainslie.)

CEPHAELIS. (De Cand. iv. 532.)

CEPHAELIS IPECACUANHA. (Rich.) *Callicocca ipecacuanha.* (Brot.) Brazil, New Granada.

The well-known emetic root called ipecacuanha is obtained from this plant. In commerce it is called the annulated, Brazilian, or Lisbon ipecacuanha, to distinguish it from the roots of other emetic plants also collected in Brazil for officinal use; it is chiefly used as an emetic, sudorific, and expectorant; its powder acts upon the respiratory passages as an irritant, producing spasmodic asthma: in some cases the mere odour of the root seems sufficient to excite difficulty of breathing, with a feeling of suffocation. (Pereira.) The outside contains sixteen per cent. of emetine; the woody fibre in the centre only one quarter per cent.

According to Pereira, the varieties of ipecacuanha are:—

α. *Brown annulated ipecacuanha*, Richard; *Brown ipecacuanha*, Lemery; *Grey, or annulated ipecacuanha* of Merat.

β. *Red annulated ipecacuanha*, Richard; the *Red-grey ipecacuanha* of Lemery and Merat.

γ. *Grey annulated ipecacuanha*, Richard; *White-grey ipecacuanha*, Merat; *Greater annulated ipecacuanha*, Guibourt.

CEPHAELIS MUSCOSA. (Swartz.) *Morinda muscosa.* (Jacq.) *Tapogomea muscosa.* (Poir.) Jamaica and West Indies.

CEPHAELIS PUNICEA. (Willd.) *Tapogomea elata.* (Poir.) Jamaica and West Indies.

Are also emetic, according to Von Martius.

CHIOCOCCA. (De Cand. iv. 482.)

CHIOCOCCA ANGUIFUGA. (Mart.) *C. brachiata.* (Ruiz et Pav.) *C. racemosa.* (H. B. et Kunth.) South America and West Indies.

CHIOCOCCA DENSIFOLIA. (Mart.) *Cahinca.* Brazil.

The roots of these two species, under the name *Cahinca*, or *Cainca*, are employed with confidence by the natives of Brazil, as a certain remedy for serpent bites; an infusion of the bark of the root produces the most violent emetic and drastic effects; copious perspirations fol-

low, and these are succeeded by a gentle sleep; their violent action renders them dangerous to employ, except in cases of poisoning, or in such maladies as require a prompt and complete evacuation of the intestines. (L.)

CINCHONA. (De Cand. iv. 351.)

The bark of different species of Cinchona has, for about two centuries, been extensively and most successfully used in medicine. It has been used under the names of *Countess's Powder*, *Pulvis Comitissæ*, *Jesuits' Bark*, *Pulvis Patrum*, *Lugo's Powder*, *Talbor's Powder*, *&c.* The tree yielding the bark was first made known to botanists in 1737 by La Condamine, a French academician, who collected specimens in the province of Loxa, and published a description of them on his return to Europe. Linnæus, soon afterwards, gave to it the name of *Cinchona officinalis*, in honour of the Countess of Chinchon, wife of the Viceroy of Peru, who is said to have first introduced the bark into Europe about the year 1639. For sometime after the first botanical description of the tree had been published, all the commercial varieties of Peruvian bark were ascribed to one species, the *Cinchona officinalis*, of Linnæus. In the course of time, however, specimens were collected by several botanists who visited the bark districts, and numerous species became recognised. The botanists who, after La Condamine, personally examined the tree yielding Peruvian bark were Joseph de Jussieu, Mutis, Zea, Ruiz and Pavon, Humboldt and Bonpland, Popping, and lastly Weddell. Joseph de Jussieu visited the district of Loxa in 1739. Mutis and his pupil Zea examined the Cinchona trees of New Granada in 1762 and succeeding years. Ruiz and Pavon explored the central portions of Lower Peru in 1777. Humboldt and Bonpland visited the bark districts of Peru about 1790. Popping travelled in the same districts in 1832, and Weddell in 1845 to 1848.

The genus *Cinchona* of Linnæus was divided into two sections, or sub-genera, by Endlicher, and these have been made two distinct genera by Weddell, the one being called *Cinchona* and the other *Cascarilla*. The former of these alone yields the Cinchona barks of commerce and the true Cinchona alkaloids. Weddell notices twenty-one species, thirteen of which are supposed to yield barks which are met with in commerce. These twenty-one species will be first described, and then some species referred to by other botanists.

1. CINCHONA AMYGDALIFOLIA. (Wedd.) Bolivia and Peru.
Bark called in Peru *Cascarilla Echenique*, and by the Bolivians *Cascarilla-Quepo*, or *Quepo-Cascarilla*. It is sometimes met with in English commerce, being one of the so-called *spurious* or *false Calisaya barks*.

2. CINCHONA ASPERIFOLIA. (Wedd.) Bolivia.
Bark not met with in commerce.

3. CINCHONA AUSTRALIS. (Wedd.) South Bolivia.
Bark called by the Bolivians *Cascarilla de la Cordillera*, or *de Peray*, or *Cascarilla de Santa Cruz de la Sierra*. Perhaps occasionally met with in commerce.

4. CINCHONA BOLIVIANA. (Wedd.) Bolivia and Peru.

Bark called *Calisaya morada*, or *Cascarilla verde morada*. It is mixed with the Calisaya bark of commerce, and is one of those sometimes distinguished as *light* or *flimsy Calisaya bark*.

5. CINCHONA CALISAYA. (Wedd.) Bolivia and South Peru.

There are two varieties of this species:—

α. *C. Calisaya vera.* (Wedd.) This yields the yellow, or true *Calisaya bark* of English commerce, which is one of the species of bark most rich in quinine. It is generally in *flat*, but also in *quilled* pieces. It is sometimes distinguished as *Royal yellow bark*, or *China Regia*.

β. *C. Calisaya Jesephiana.* (Wedd.) *Ichu Cascarilla*, or *Cascarilla del Pajonal*. The bark of this tree is sometimes imported mixed with the true Calisaya bark.

6. CINCHONA CARABAYENSIS. (Wedd.) Peru.

Bark very thin; has not been collected for commercial purposes. This species does not yield the *Carabaya bark* of commerce, which is referred by Weddell to *C. ovata* var. *vulgaris*.

7. CINCHONA CHOMELIANA. (Wedd.) Bolivia.

Bark similar to that of C. ovata, but not known in commerce.

8. CINCHONA CONDAMINIA. (Wedd.)

Weddell describes five varieties of this species.

α. *C. Condaminia vera.* (Wedd.) *Cinchona officinalis.* (Linn.) *Cinchona lancifolia* (Rohde.) *C. Condaminea* (H. and B.) Mountains near Loxa.

There seems to be no doubt that this tree furnished the *Pale*, *Crown*, or *Loxa bark* formerly known in English commerce, or at all events a principal part of it.

β. *C. C. Candollii.* (Wedd.) *C. Macrocalyx.* (Pav.) *Quina nigra. Black Cinchona.* Cuenca.

The bark of this tree probably forms part of the Loxa bark of commerce.

γ. *C. C. Lucumæfolia.* (Wedd.) *Cinchona lucumæfolia.* (Pav.) *C. macrocalyx* var. *lucumæfolia.* (De Cand.) Loxa.

Bark, in large quills, with white, silvery, lustrous coat, occasionally mixed in Loxa bark. Pereira refers *White Crown bark* to this variety.

δ. *C. C. Lancifolia.* (Wedd.) *Cinchona lancifolia.* (Mutis.) *Cinchona angustifolia.* (Ruiz and Pav.) Peru, Equador, and New Granada.

Bark, *Caqueta*, or *Coquetta*, or *Bogota* bark, is largely imported into England from Carthagena and other ports of the Caribbean Sea. It is the *Spongy Carthagena bark* of Guibourt, the *Fibrous Carthagena bark* of Goebel, or *Mutis's Orange-coloured bark*. This bark is much used for the manufacture of sulphate of quinine.

ε. *C. C. Pitayensis.* (Wedd.) *Cinchona lanceolata.* (Bentham.) *Cascarilla roja de Pitaya.* New Granada.

Bark, supposed to be the *Pitaya* bark of commerce, one of the most esteemed sorts for the manufacture of sulphate of quinine. It is also known as *Colombia*, or *Antioquia bark*.

9. CINCHONA CORDIFOLIA. (Wedd.)
Weddell describes two varieties of this species:—
a. C. Cordifolia vera. (Wedd.) *Cinchona cordifolia.* (Mutis.) *C. pubescens* var. *cordata.* (De Cand.) New Granada and Peru.
Bark, called *Velvet bark* in New Granada, and known in England as *Hard Carthagena bark.* It has also been called the *Yellow bark of Santa Fé.* It is considered an inferior bark for manufacturing purposes.
β. C. C. rotundifolia. (Wedd.) *Cinchona rotundifolia.* (Pavon.) Loxa.
Bark, probably the *Ashy Crown bark* of commerce.

10. CINCHONA DISCOLOR. (Weddell, and Klotzsch.) *Cascarilla hoja de Olivia. Olive-leaved Cinchona.* Peru.
Bark not known in commerce.

11. CINCHONA GLANDULIFERA. (Weddell, and Ruiz and Pavon.) Peru.
Bark, called *Cascarilla negrilla,* or *Blackish bark,* forms, according to Poeppig, part of the *Huanuco bark* of commerce.

12. CINCHONA HIRSUTA. (Weddell, and Ruiz and Pavon.) Peru.
Bark, called *Cascarilla delgada,* or *delgadilla* (*Slender bark*) by the Peruvians, has been supposed to form the *Wiry Crown bark* of commerce.

13. CINCHONA HUMBOLDTIANA. (Lambert.) *Cinchona villosa.* (Lind.)
Bark not known in commerce.

14. CINCHONA MICRANTHA. (Wedd.) Bolivia and Peru.
Weddell makes two varieties of this species:—*a. rotundifolia*; and *β. oblongifolia.*
Bark, called by the inhabitants of Huanuco, *Cascarilla provinciana;* in Carabaya, *Motosolo;* and in Bolivia, *Cascarilla verde.* The quilled pieces form part of the *Huanuco* or *Grey barks* of commerce; the flat pieces are sometimes mixed with Calisaya bark.

15. CINCHONA MUTISII. (Lambert.) *Cinchona glandulifera* (Linn.) Loxa.
Weddell makes two varieties of this species:—
a. C. M. microphylla. (Wedd.) *Cinchona microphylla* (Mutis.) *Cinchona quercifolia.* (Pav.)
β. C. M. crispa. (Wedd.) *Cinchona quercifolia* var. *crispa* (Pav.)
Bark not known in commerce.

16. CINCHONA NITIDA. (Wedd. and Ruiz and Pav.) *Cinchona lancifolia,* var. *nitida.* (Rœm.) Peru, especially Huanuco, &c.
Bark forms part of the *Huanuco,* or *Grey bark* of English commerce.

17. CINCHONA OVATA. (Wedd.)
Weddell makes three varieties of this species:—
a. C. o. vulgaris. (Wedd.) *Cinchona ovata.* (Fl. Per.) *Cinchona pubescens.* (Lamb.) Peru and Bolivia.

Yields the *Ash*, *Jaen*, or *Ten bark*, of English commerce. This bark is known in Peru by the name of *Cascarilla pata de Gallareta.* The bark known as *Carabaya bark* is ascribed to this species by Dr. Weddell.

β. C. o. rufinervis. (Wedd.) Carabaya in South Peru.

The bark of this species is called *Cascarilla Carabaya* in Peru.

γ. C. o. erythroderma. (Wedd.) Peru

Yields a red bark, which may probably be the *red bark* of commerce.

18. CINCHONA PELALBA. (Weddell, and Pavon.) Peru.

Bark not known in commerce.

19. CINCHONA PUBESCENS. (Wedd.) Peru and Bolivia.

Weddell makes two varieties of this species:—

α. C. p. Pelletieriana. (Wedd.) *Cinchona pubescens.* (Vahl.) Bark, *Arico*, or *Cusco bark*, inferior in quality.

β. C. p. purpurea. (Wedd.) *Cinchona purpurea.* (Ruiz and Pav.) Bark called *mulberry-leaved booby bark.*

20. CINCHONA PURPURASCENS. (Wedd.) Bolivia.

Guibourt ascribes what he calls *White Loxa bark* to this species.

21. CINCHONA SCROBICULATA. (Wedd.)

Weddell makes two varieties of this species:—

α. C. s. genuina. (Wedd.) *Cinchona scrobiculata.* (Humb. and Bonpl.) *Cinchona purpurea.* (Lamb.) *Cinchona micrantha.* (Linn.)

The *Red Cusco bark* of the Peruvians, which is one of the *Cusco barks* of English commerce, is derived from this tree. The bark is also known as *St. Ann's bark*, or *Cascarilla de Santa-Ana.* The younger quilled and coated pieces are supposed to form part of the bark now met with as *Crown bark* in commerce.

β. C. s. Delondriana. (Wedd.) Middle Peru.

The bark of this variety is known in English commerce as *Peruvian Calisaya.*

CINCHONA ACUTIFOLIA. (Ruiz et Pav.) *Cascarilla acutifolia.* (Wedd.) *Cascarilla de hoja aguda.* (Ruiz.) Low groves of the Peruvian Andes in Chicoplaya by the river Taso.

One of the worst species for medicinal purposes, sometimes found in parcels of the other barks. (Ruiz and Pavon.)

CINCHONA CADUCIFLORA. (Humb.) *Cascarilla magnifolia.* (Wedd.) Near the town of Jaen de Bracamoros.

It is stated in the *Plantæ Æquinoctiales*, that this is called *Cascarilla bora*, and that no use is made of the bark, although that of the trunk contains a great deal of resin. (L.)

CINCHONA DICHOTOMA. (Fl. Peruv. ii. 53 to 197.) *Ladenbergia dichotoma.* (Klotzsch.) *Cascarillo ahorquillado*, (R. and P.) Andes, near Pueblo Nuevo.

Uncertain whether this is really a cinchona; according to R. and P. the bark has the reputation in Chicoplaya of being one of the *Quinas finas*, or best for medicinal purposes. (L.) It is excluded from the Cinchonas by Weddell.

CINCHONA MACROCARPA. (Vahl.) *Cinchona ovalifolia.* (Mutis.) *Cascarilla macrocarpa.* (Wedd.) Loxa, Santa Fé.

Bark, *Guaiana bark*, in long pieces, thick, bitter, scentless. (G.) It is excluded from the Cinchonas by Weddell.

CINCHONA OBLONGIFOLIA. (Mutis, not of Lambert.) *Cinchona magnifolia.* (Ruiz and Pavon, and Lambert.) *Cinchona grandifolia.* (Poir.) *Cinchona caduciflora.* (Humb. and Bonpl.) *Cascarillo amarillo.* (Ruiz, Quinol. 71.) *Cascarilla magnifolia.* (Weddell.) New Granada. Abundant on the mountains of Panatahuas, about Cuchero, Chincao, Chacahuassi, &c.

This tree is known in the districts in which it grows by the name of *Cascarillo de flor de Azahar*, which is derived from the resemblance which the smell of its beautiful flowers bears to those of the orange. It was long considered, having been so assigned by Mutis, as the source of the *Red Cinchona bark* of commerce. This error arose from Mutis having confounded the red bark of New Granada with that of Loxa, the former being derived from this tree, while the latter is a perfectly distinct species. The bark of *Cinchona oblongifolia* (Mutis), is the *Red Carthagena bark*, sometimes known as *Quina nova* or *New bark.* For manufacturing or medicinal purposes it is worthless, being deficient in the alkaloids. The tree has been excluded from the genus Cinchona by Weddell, who makes it the type of his new genus Cascarilla.

CINCHONA OBLONGIFOLIA. (Lambert, not of Mutis.) *Cascarilla Riveroana.* (Wedd.) Jean de Loxa.

According to Lindley, the bark of this species is unknown in commerce. It is excluded from the Cinchonas by Weddell.

CINCHONA ROSEA. (Ruiz et Pav.) *Lasionema rosea.* (Don.) Peru.

Bark thick, woody, long, straight, flat, smooth; coat whitish; inside red or flesh-colour, mawkish, then acrid, nauseous; infusion and tincture astringent, not bitter, slightly febrifuge.

CINCHONA TRIFLORA. (Wright.) *Exostemma triflora.* (Berg.)

Bark, *Jamaica bark*, in a full dose emetic.

OFFICINAL AND COMMERCIAL CINCHONA BARKS.

Three varieties of Cinchona bark are included in the Materia Medica of the London Pharmacopœia of 1851, under the popular names of *Pale bark*, *Yellow bark*, and *Red bark.*

PALE BARK, is referred by the London College of Physicians to *C. Condaminia.* (Weddell.) Of this species, however, Weddell makes five varieties, the barks of two of which certainly do not come under the demonination of *Pale bark*, and the authors of the Pharmacopæia do not indicate which of the varieties they intend to be used.

1. *Loxa, or Crown bark*, is the sort of bark to which the name of *Pale bark* is most frequently applied in commerce, and as the Loxa bark which was originally imported is considered to have been derived principally from Weddell's variety *vera* of *Condaminea*, but partly also from varieties *Candollii* and *Lucumæfolia* of the same species, it may be inferred that this is the bark referred to by the College. But the *Crown bark* now usually occurring in commerce, which is known as

H. O. Crown bark, is probably derived from *C. scrobiculata, var. genuina*, or *C. glandulifera;* this, therefore, is not the pale bark of the pharmacopœia.

Under the general denomination of *Pale bark* may also be included some other varieties of quilled bark, which more or less resemble Crown bark in external appearance, and in the alkaloids present, among which cinchonine predominates. These are,—

2. *Grey, Silver, or Huanuco bark*, which is referred to *C. nitida*, and *C. micrantha*. The former is supposed to yield the best or *Fine Grey bark*, and the latter the *Inferior* or *Coarse Grey bark*.

3. *Huamalies bark*, which, when quilled, is of a dull-grey externally. This has been ascribed to *C. pubescens, var. purpurea* (Weddell), but according to Mr. J. E. Howard, it is more probably derived from *C. Condaminea, var. vera*.

4. *Ash, Jaen*, or *Ten bark*, which is derived from a variety of *C. ovata*.

YELLOW BARK, is referred by the London College of Physicians to *C. Calisaya* (Weddell). This species, of which Weddell makes two varieties, furnishes the bark known in commerce as,—

1. *Calisaya, Royal, or Yellow bark*, which is usually in flat, but sometimes in quilled pieces. This sort of bark is richer than any other in quinine. It is principally derived from *C. Calisaya, var. vera*, of Weddell, but the bark of the other variety of this species, and barks of other species are sometimes mixed with or substituted for the true Calisaya bark. The *false* or *spurious Calisaya barks* are derived from *C. Boliviana, C. ovata, var. rufinervis, C micrantha, C. amygdalifolia, C. scrobiculata, varieties, genuina and Delondriana*.

Under the general denomination of *Yellow bark* may be included the following,—

2. *Carabaya bark*, which is probably derived from *C. ovata, varieties, vulgaris and rufinervis*.

3. *Cusco bark*, which is derived from *C. pubescens, var. Pelletieriena*.

4. *Pitaya bark*, known also as *Colombia* or *Antioquia bark*, derived from *C. Condaminea, var. Pitayensis*.

5. *Hard Carthagena bark*, derived from *C. cordifolia, var. vera*.

6. *Fibrous or Spongy Carthagena bark*, derived from *C. Condaminea, var. lancifolia*.

RED BARK, according to the London Pharmacopæia of 1851, is derived from an uncertain species of Cinchona. It is probable that the colour of the Cinchona barks is not peculiar to any particular species of the genus, but is rather due to the conditions under which the bark has been produced or prepared, such as climate, soil, age of the tree, mode of drying the bark, &c. Weddell states that he has found the barks of *C. ovata, C. scrobiculata, C. pubescens*, and *C. Calisaya*, sometimes to assume a more or less red tint from such causes. Nothing has been satisfactorily made out respecting the origin of the *Red bark* of commerce. Weddell was at one time disposed to ascribe it to *C. ovata, var. erythroderma*, but has since been induced to doubt this.

The bark of *C. oblongifolia* of Mutis, which was at one time considered to yield the red bark of commerce, may be distinguished as the *Red Carthagena bark.*

COFFEA. (De Cand. iv. 468.)

COFFEA ARABICA. (Linn.) *Coffi, Coffee shrub.* Low mountains of Arabia Felix.

The fresh seeds are febrifuge, diuretic, and tonic; decoction used for that of Peruvian bark. (G.) The albumen of the seeds constitutes the coffee of commerce, the agreeable stimulating effects of which, after being roasted, are well known. It has the power of removing drowsiness, and of retarding the access of sleep, for some hours.

CONDAMINEA. (De Cand. iv. 402.)

CONDAMINEA CORYMBOSA. (D. C.) *Macrocnemum corymbosum.* (R. et P.) Peruvian Andes.

Bark bitter, viscid, inside white, often mixed with that of cinchona. (G.) Bark febrifugal; the bark-gatherers of Peru are said by Ruiz and Pavon to use this plant for adulterating cinchona; its bark is only slightly bitter, and may be easily recognised by its being white inside, rather bitter and viscid. (L.)

COUTAREA. (De Cand. iv. 350.)

COUTAREA SPECIOSA. (Aubl.) *Portlandia hexandra.* (Jacq.) Guayana, Cayenne.

The bark of French Guayana is said to be procured from this shrub: its properties are similar to those of cinchona.

EXOSTEMMA. (De Cand. iv. 358.)

EXOSTEMMA BRACHYCARPUM. (Rœm.) *Cinchona brachycarpa.* (Swartz.) Jamaica.

Bark emetic in a full dose. (G.)

EXOSTEMMA CARIBÆUM. (Rœm.) *Cinchona caribæa,* (Jacq.) *C. Jamaicensis,* (Wright,) *Quinquina piton, Sea-side beech.* West Indies and Mexico.

Bark, *Caribbee bark, Quinquina des antilles,* cinnamon colour, bitter, scentless, cheap. (G.) Febrifuge and emetic; smell nauseous, excessively bitter and disagreeable; according to Dr. Wright, the flavour is at first sweet, with a mixture of horse-radish and aromatics, afterwards excessively bitter.

EXOSTEMMA CORIACEUM. (Rœm.) *Cinchona coriacea.* (Poir.) St. Domingo.

Bark highly esteemed in America.

EXOSTEMMA FLORIBUNDUM. (Rœm.) *Cinchona floribunda,* (Swartz,) *C. Montana,* (Badier,) *C. sanctæ Luziæ,* (David,) *C. Luziana,* (Vitm.) West India Islands.

Bark, *St. Lucie bark, Quinquina piton,* thick, brown, rugged; inside rusty fawn; mostly used externally, being apt to excite vomiting and purging. (G.) Bark similar to that of *E. Caribæum,* but rather drastic; Pelletier and Caventou found in it neither quinine nor cinchonine: it is also called *Quinquina of St. Lucia.* (L.)

EXOSTEMMA PERUVIANUM. (Humb.) *Cinchona Peruviana.* (Poir.) Colder parts of Peru.

Bark very bitter, sweetish, smell nauseous. (L.) Supposed to yield *Quina bicolorata*, but this is doubtful.

EXOSTEMMA SOUZANUM. (Mart.) Brazil.

According to Guibourt, this plant produces an excessively bitter febrifugal bark, called *Quinquina de piautri*. It colours the saliva yellow, and is said to contain cinchonine; Buckner found in it an alkali, which he called *Esenbeckine*, upon the erroneous supposition that the bark belonged to *Esenbeckia febrifuga*. (L.)

Guibourt has ascribed the bark sometimes called *Pitaya bark* (not the Pitaya described at page 340), the *Quina bicolorata* of the French, to a species of Exostemma.

GALIUM. (De Cand. iv. 593.)

*GALIUM APARINE. (Linn.) (E. B. 816.) *Aparine hispida.* (Mönch.) *Rubia tinctorum.* (Lapeyr.) *Aparine, Cleavers, Goose grass.*

Fl. white. June, July. Annual. Hedges. Very common.

*GALIUM ULIGINOSUM. (Linn.) (E. B. 1972). *Mollugo montana, Rough marsh bedstraw.*

Fl. white. August. Perennial. Sides of ditches. Common.

*GALIUM VERUM. (Linn.) (E. B. 660.) *Cheese renning bedstraw, Yellow bedstraw.*

Fl. yellow. July, August. Perennial. Dry banks in sandy soil. Common.

Vulnerary, infusion used to curdle milk; roots dye a red colour. (G.) Flower-stalks used as a yellow dye, and employed for colouring Cheshire cheese. (O'Sh.)

*GALIUM MOLLUGO. (Linn.) (E. B. 1673.) *G. luteum.* (Mönch.) *Rubia sylvestris lævis, Great hedge bedstraw, Wild madder.*

Fl. white. July, August. Perennial. Hedges and thickets. Common.

GALIUM SYLVATICUM. (Linn.) Most parts of Europe.

The roots of this and of the preceding species dye red; herbs opening.

*GALIUM CRUCIATA. (Scop.) *G. cruciatum.* (Smith.) *G. Vaillantia.* (Wett.) *G. Valantia.* (Baumg.) *Aparine latifolia.* (Mönch.) *Cruciata, Valantia cruciata.* (Linn.) *Cross-leaved bedstraw, Crosswort.*

Fl. yellow. May, June. Perennial. Hedge-banks and thickets.

Root used in dyeing.

GARDENIA. (De Cand. iv. 379.)

GARDENIA CAMPANULATA. (Roxb.) East Indies.

Fruit cathartic and anthelmintic. (Roxb.)

GARDENIA GUMMIFERA. (Linn.) Ceylon, Coromandel.

Exudes a gum-resin like elemi.

GARDENIA LUCIDA. (Roxb.) *G. resinifera.* (Roth.) East Indies.

The young shoots and flower-buds exude a resin called *Dikki-malei, Dik-millei*, or *Cumbi gum* of Hindostan. Ainslie describes this as a gum-resin resembling myrrh in appearance, and possessing nearly similar virtues, but more active. Mr. Edward Solly found it to contain 83 per cent. of a yellowish-brown resin, mixed with impurities.

GENIPA. (De Cand. iv. 378.)

GENIPA AMERICANA. (Linn.) *Gardeni Genipa.* (Swartz.) West Indies.

Berry eatable.

GEOPHILA. (De Cand. iv. 537.)

GEOPHILA MACROPODA. (D. C.) *Psychotria macropoda.* (Ruiz et Pav.) *Psychotria cordifolia.* (Dietr.) South America.

Emetic.

GEOPHILA RENIFORMIS. (Cham. et Schlecht.) *Cephaelis reniformis.* (H. B. et Kunth.) *Psychotria herbacea.* (Linn.) Hotter parts of America.

Root emetic, substituted for ipecacuanha. (L.)

HYDROPHILAX. (De Cand. iv. 576.)

HYDROPHILAX MARITIMA. (Linn.) *Sarissus anceps.* (Gaertn.) Malabar and Coromandel.

Fibres of the roots, *Muddi awl*, imported from the East Indies; used for dyeing reds and browns. See Morinda and Patabea.

HYMENODICTYON. (De Cand. iv. 358.)

HYMENODICTYON EXCELSUM. (Wall.) *Cinchona excelsa.* (Roxb.) East Indies.

The two inner layers of bark possess the bitterness and astringency of Peruvian bark; the bitterness is not so quickly communicated to the taste on chewing the bark, but is much more durable, especially about the upper part of the fauces. (L. ex Roxb.)

ISERTIA. (De Cand. iv. 437.)

ISERTIA COCCINEA. (Vahl.) *Guettarda coccinea.* (Aubl.) Guayana.

Bark very bitter. (G.) A decoction of the leaves employed by the creoles as a fomentation to cure swellings; bark febrifugal. (L.)

MANETTIA. (De Cand. iv. 362.)

MANETTIA CORDIFOLIA. (Mart.) *M. Glabra.* Buenos Ayres, &c.

Bark of the root considered a valuable remedy in dropsy and dysentery; given in powder, dose ʒss. to ʒiss., acts as an emetic. (L.)

MORINDA. (De Cand. iv. 446.)

MORINDA CITRIFOLIA. (Linn.) *Bancudus latifolius, Cada pilava.*
MORINDA UMBELLATA. (Linn.) India.

Fibres of the roots, *Muddi awl*, imported from the East Indies; used for dyeing reds and browns. See Patabea and Hydrophilax

NONATELIA. (De Cand. iv. 466.)

NONATELIA OFFICINALIS. (Aubl.) *Psychotria involucrata.* (Swartz.) Cayenne and Guayana.

Pectoral in infusion. (G.)

All the parts, when bruised, give out a slight aromatic odour. The creoles call it *Azier à l'asthme*, because they find an infusion of the leaves an excellent remedy for asthma. (L.)

OLDENLANDIA. (De Cand. iv. 424.)

OLDENLANDIA UMBELLATA. (Linn.) *Indian madder.* Java, Coromandel.

Root, *Chay root*, used in dyeing. (G.)

Leaves expectorant; roots substituted for madder in the East Indies. (L.)

Employed in Coromandel to dye an excellent red on cotton cloth. (O'Sh.)

OPHIORHIZA. (De Cand. iv. 415.)

OPHIORHIZA MUNGOS. (Linn.) Java, Ceylon, Sumatra.

The parts are so intensely bitter that it is called by the Malays *Earth-gall;* it has the reputation of being a most powerful alexipharmic, but this requires confirmation. (L.) Has high reputation as a remedy for snake-bites; but Roxburgh altogether discredits its supposed virtues. (O'Sh.)

PÆDERIA. (De Cand. iv. 471.)

PÆDERIA FŒTIDA. (Linn.) *Apocynum fœtidum.* (Burm.) *Convolvulus fœtidus.* East Indies, Japan.

Leaves very fœtid and alliaceous; used to impregnate baths, and in decoction are administered internally in retention of urine, and in certain febrile complaints. Root employed as an emetic. (L. ex Roxb.)

PALICOUREA. (De Cand. iv. 524.)

PALICOUREA CROCEA. (D. C.) *Psychotria crocea.* (Swartz.) West Indies.

Emetic.

PALICOUREA MARCGRAVII. (St. Hil.) *Galvania vellozii.* (Rœm. et Schult.) *Ervado rato.* (Mart.) Brazil.

A poisonous plant, used to kill rats and mice.

PALICOUREA OFFICINALIS. (Mart.) Brazil.

In small doses powerfully diuretic; used both in human and veterinary medicine. (L.)

PALICOUREA DIURETICA. (Mart.) P. STREPEUS, (Mart.) P. SONANS, (Mart.) and P. LONGIFOLIA, (H. B. et K.) are said to have similar properties.

PALICOUREA SPECIOSA. (H. B. et Kunth.) *Douradinha da Campo.*

Leaves antisyphilitic. (G.) New Granada, Brazil.

The decoction, which in large doses is poisonous, acts especially by an increased action of the skin and kidneys, and the digestion is not hindered by moderate doses. (L. ex Martius.)

PALICOUREA SULPHUREA. (D. C.) *Psychotrea sulphurea.* (Ruiz et Pav.) Peru.

Extremely bitter; yields a fine yellow tincture, used as a tonic.

PATABEA. (De Cand. iv. 537.)

PATABEA COCCINEA. (Aubl.) *Cephælis sessiliflora.* (Willd.)

One of the plants, the fibres of whose roots, under the name of *Muddi awl*, are imported from the East Indies, and employed in dyeing reds and browns. See Hydrophilax and Morinda.

PINKNEYA. (De Cand. iv. 366.)

PINKNEYA PUBENS. (Michx.) *Cinchona Caroliniana*, *P. pubescens*. South Carolina and Florida.

Bark febrifugal, and used in Carolina as a substitute for cinchona. (L.)

PSYCHOTRIA. (De Cand. iv. 504.)

PSYCHOTRIA EMETICA. (Mutis.) *Cephaelis emetica*. (Pers.) *Ronabea emetica*. (Richard.) New Granada.

Root, *Brown ipecacuanha*, *Ipecacuanha noir*, *Ipec. non annelé*; emetic; contains nine per cent. of emetine. (G.) It is the *striated ipecacuanha* of Guibourt, Pereira, &c.; the *black* or *Peruvian ipecacuanha* of others. (L.) Similar to the true ipecacuanha in its properties but weaker. It is not found in the English market. (Pereira.)

PSYCHOTRIA NOXIA. (St. Hil.) Brazil.

Is a reputed poison. (L.)

RANDIA. (De Cand. iv. 384.)

RANDIA DUMETORUM. (Lamb.) *Canthium coronatum*. (Lamb.) *Gardenia dumetorum*. (Retz.) *G. spinosa*. (Thunb.) *R. spinosa*. (Blum.) *Gardenio spinosa*. (Linn.) *Posoqueria dumetorum*. (Roxb.) *Ceriscus Malabaricus*. (Gaertn.) Coast of Coromandel.

Root, *Malabar ipecacuanha*, emetic. (G.) The fruit, when bruised and thrown into water, intoxicates or even kills fish, which are not considered less wholesome in consequence; in the form of powder, it is a powerful emetic; an infusion of the bark of the root is employed to nauseate in bowel complaints. (L.) O'Shaughnessy states, that the fruit was carefully examined during a search made by himself and others for an efficient substitute for ipecacuanha; the result was, the opinion, that little or no dependence can be placed on it as an emetic remedy.

RANDIA RUIZIANA. (D. C.) *Gardenia longiflora*. (Ruiz et. Pav.) South America.

Berry eatable.

REMIJIA. (De Cand. iv. 357.)

REMIJIA FERRUGINEA. (D. C.) *Cinchona ferruginea*. (St. Hil.) Brazil.

REMIJIA VELLOZII, (D. C.) *Cinchona Vellozii*. (St. Hil.) Brazil.

These are substituted in Brazil for cinchona bark, under the names of *Quina de serra*, or *Quina de remijo*, but are said to be of inferior quality. (L.)

RICHARDSONIA. (De Cand. iv. 567.)

RICHARDSONIA ROSEA. (St. Hil.) *R. emetica*. (Mart.) Brazil.

Von Martius speaks highly of the excellence of the root of this plant, as an agreeable emetic, in doses of one or two drachms. (L.)

RICHARDSONIA SCABRA. (St. Hil.) *R. Braziliensis*. (Gom.) *Richardia scabra*. (Linn.) *Richardia pilosa*. (Ruiz et Pav.) *Spermacoce hirsuta*. (Rœm. et Schult.) *Spermacoce hexandra*. (Rich.) Brazil.

Root imported as a substitute for ipecacuanha, and forms the *undulated*, *amylaceous*, or *white ipecacuanha* of pharmaceutical writers. It

does not contain, according to Pelletier, more than six per cent. of emetine.

RUBIA. (De Cand. iv. 588.)

RUBIA MUNGISTA. (Roxb.) *R. mangith.* (Roxb.) *R. cordata.* (Thunb.) Bengal.

Root, *Bengal madder*, *Mungeet*, employed in dyeing.

RUBIA TINCTORUM. (Linn.) *R. peregrina.* (Murr.) *R. sylvestris.* (Mill.) *R. tinctorum.* (Mill.) *Madder.* South of Europe.

Root, *madder*, *grappe*, *meekrappe*, *lizari*, *rubiæ radix*, slightly astringent, diuretic, emmenagogue, and aperitive; used in the rickets; dose in powder ʒj. to ʒss.; chiefly used as a valuable dyeing root; dyes red. (G.) The roots of both of these contain a red colouring matter, *Alizarin*, (Robiquet,) and also a yellow colouring matter, *Xanthine* (Kuhl). The former occurs in orange-red crystals, tasteless, inodorous, little soluble in cold, but soluble in boiling water; also in alcohol, ether, the fixed oils, and alkalies. A solution of alum added to a solution of alizarin, and precipitated by potash, gives a rose lake of the most charming tint. *Xanthine* is yellow, very soluble in water, and alcohol, slightly in ether; the solution passes to orange-red by contact with alkalies, to lemon-yellow by acids; it is inodorous, but has a sweetish-bitter taste. (O'Sh.) According to Runge, there are no fewer than five colouring matters in madder—viz., *Madder purple (purpurin)*; *Madder red (alizarin)*; *Madder orange*; *Madder yellow (xanthin)*; and *Madder brown.* He also mentions two colourless acids of madder, viz., *Maderic* and *Rubiacic acids.* (Pereira.) The bones of animals fed on madder are coloured red.

SHERARDIA. (De Cand. iv. 581.)

*SHERARDIA ARVENSIS. (Linn.) (E. B. 891.) *Herb sherard, Little field madder.*

Fl. blue. June, August. Annual. Cultivated fields. Common. Qualities the same as those of galium. (G.)

SIDERODENDRON. (De Cand. iv. 478.)

SIDERODENDRON TRIFLORUM. (Vahl.) *Iron wood.* South America. Bark diuretic, stomachic.

STENOSTOMUM. (De Cand. iv. 460.)

STENOSTOMUM ACUTATUM. South America.

The bark called *Quina bicolorata* has been ascribed by some authors to this tree.

UNCARIA. (De Cand. iv. 347.)

UNCARIA GAMBIR. (Roxb.) *Nauclea gambir.* (Hunt.) Indian Archipelago.

Gutta gambir is made from it. (G.) An extract, called *Gambier*, is prepared by the Malays from the leaves of this shrub; with some sweetness, it has a more astringent taste than *Terra Japonica*; Roxburgh considered it one of the drugs, if not the only one, formerly called by that name in Europe. The extract is chewed by the natives with betel-leaf and areca; the leaves are chewed to relieve aphthous

eruptions of the mouth and fauces. Dr. Pereira considers this gambier not to form any of the kinos of the shops, but to be one of the substances called *catechu* in commerce. (L.)

VANGUIERA. (De Cand iv. 454.)

VANGUIERA EDULIS. (Vahl.) *V. cymosa.* (Gaertn.) *V. Madagascariensis.* (Gmel.) *V. Commersonii.* (Desf.) Madagascar, China.

Seeds like almonds.

ORDER 84. VALERIANEÆ. (De Cand. iv. 623.)

Tube of the *calyx* adnate to the ovary, limb either dentate or partite, or pappiform and involute; *corolla* tubular, infundibuliform, generally five-lobed, rarely 3—4 lobed, lobes obtuse, tube equal, or gibbous, or spurred at the base; *stamens* adhering by their filaments to the tube of the corolla, free at the apex, alternate with the lobes of the corolla, five, or by abortion, four, three, two, or one; *anthers* ovate, bilocular; *style* filiform; *stigmas* 2—3, free, or concreted into a single one; *fruit* membraneous, or subnucamentaceous, indehiscent, crowned when young by the limb of the calyx, either one or three celled, two being empty; *seeds* in the fertile cell solitary, pendulous, exalbuminous; *embryo* straight; *radicle* superior; *cotyledons* flat. Annual or perennial *herbs*, the latter having strong-scented roots; *leaves* opposite, exstipulate, varying much in shape, not only in different species, but also in the same individual; *flowers* cymo-corymbose.

CENTRANTHUS. (De Cand. iv. 631.)

*CENTRANTHUS RUBER. (D. C.) (E. B. 1532.) C. *latifolius.* (Dufr.) *C. maritimus.* (Gray.) *Valeriana rubra.* (All.) *Red valerian.*

Fl. rose-coloured. June, July. Perennial. Chalk pits in Kent. Doubtful native.

Young shoots eaten as a salad.

NARDOSTACHYS. (De Cand. iv. 624.)

NARDOSTACHYS JATAMANSI. (D. C.) *Nardus indica.* (Bauh.) *Patrinia jatamansi.* (Don.) *Valeriana jatamansi.* (Jones.) Ναρδος ινδικη. (Dioscor.) *Spikenard.*

This, the true spikenard of the ancients, has been highly esteemed both as a perfume and as a stimulant medicine. Oriental writers give it as a remedy for a multitude of diseases, and it appears to be really valuable in hysteria and epilepsy. (L.)

VALERIANA. (De Cand. iv. 632.)

VALERIANA CELTICA. (Linn.) *Nardus celtica, Celtic nard.* Alps, France, and Italy.

Roots much esteemed in the Levant as a cosmetic and perfume. (O'Sh.)

VALERIANA MONTANA. (Linn.) *Mountain valerian.* Mountainous parts of Europe.

Roots of this and the former species aromatic; used in hysteria and epilepsy. (G.)

*VALERIANA DIOICA. (Linn.) (E. B. 628.) *V. sylvestris.* (Gray.) *Phu minus, Small marsh valerian.*

Fl. white, tinged with red. Perennial. Marshy meadows. Common.

Root an active tonic, exhibited in spasmodic diseases.

Valeriana Dioscoridis. (*Fl. Græc.*) *φον.* (Dioscorid.) Near Limysus in Lycia.

According to Sibthorp this is the real *Phu* of Dioscorides, and therefore the most powerful of the Valerians, for which V. officinalis is to be merely considered the northern substitute. De Candolle refers the species to V. sisymbrifolia of Desfontaines, an oriental plant; but this does not appear to be certain, and the former learned botanist was not personally acquainted with the subject. (L.)

Valeriana Hardwickii. (Wall.) Mountains in north of India.

The thick, fleshy, strongly-scented root used in medicine in Nepal and the north of India. (Royle.)

*Valeriana officinalis. (Linn.) (E. B. 698.) *V. sylvestris, Officinal valerian, Wild valerian.*

Fl. pale flesh-colour. June, July. Perennial. Ditches and sides of rivers. Common.

The aromatic, or rather fœtid roots, are stimulant, not only acting upon the secretions, but producing a specific influence over the cerebro-spinal system, bringing on, as is well known, a kind of intoxication in cats, and in large doses occasioning in man scintillations, agitation, and even convulsions; it is chiefly employed in asthenic fevers, epilepsy, chorea, hysteria, and as an anthelmintic. (L.)

Valeriana phu. (Linn.) *Phu, Valeriana major. Great valerian.* Alps of Switzerland, &c.

Root an active tonic, used in spasmodic diseases.

Valerianella. (De Cand. iv. 625.)

*Valerianella olitoria. (Mönch.) (E. B. 811.) *Fedia olitoria.* (Vahl.) *Valeriana locusta, Corn salad, Lamb's lettuce.*

Fl. blue. April, June. Annual. Banks and corn-fields. Common.

Young shoots eaten as a salad.

Order 85.—DIPSACEÆ. (De Cand. iv. 643.)

Tube of the *calyx* adherent to the ovary, limb in the form of a variously-divided pappus, often surrounded by a scariose involucel; *corolla* gamopetalous, tubular, inserted into the upper part of the calyx; *limb* oblique, 4—5 cleft; *stamens* four, inserted into the tube of the corolla, alternate with its lobes, and distinct; *style* filiform; *ovary* one-celled, one-seeded, generally covered by the involucel; *seed* pendulous; *albumen* fleshy; *embryo* straight; *radicle* superior; *flowers* in dense heads, very rarely in verticels.

Dipsacus. (De Cand. iv. 645.)

*Dipsacus fullonum. (Mill.) (E. B. 2080.) *Carduus fullonum, Dipsacus sativus.* (Gmel.) *Fuller's teasel, Fuller's thistle.*

Fl. pale purple. July, August. Biennial. Waste places. Doubtful native.

Root bitter and tonic.

*Dipsacus sylvestris. (Mill.) (E. B. 1032.) *D. vulgaris.* (Gmel.) *D. fullonum.* (Thor.) *Lubrum veneris, Wild teasel.*

Fl. purple. July. Biennial. Road sides and ditches. Common

Roots antiscrofulous, and in wine, diuretic.

KNAUTIA. (De Cand. iv. 650.)

*KNAUTIA ARVENSIS. (Coult.) (E. B. 659.) *Scabiosa, S. arvensis.* (Linn.) *Field scabious.*

Fl. bluish. July. Perennial. Pastures and corn fields. Common.

Leaves depurative, used in diseases of the skin, of the lungs, and in quinsy.

SCABIOSA. (De Cand. iv. 654.)

SCABIOSA SUCCISA. (Linn.) (E. B. 878.) *Asterocephalus Succisa.* (Wall.) *Succisa pratensis.* (Mönch.) *Succisa, Morsus diaboli, Devil's bit.*

Fl. violet, or dark blue. July, August. Perennial. Meadows and pastures.

Roots used in syphilis and scrofula. (G.)

ORDER 86.—COMPOSITÆ. (De Cand. v. 4.)

Calyx superior, closely adhering to the ovary, its limb entire, membraneous, toothed and formed of scales or hairs called pappus; *corolla* monopetalous, superior, either ligulate, or tubular, and 4—5 toothed; *stamens* usually five, filaments distinct; *anthers* cohering into a cylinder (syngenesious); *ovary* inferior, one-celled; *style* simple, passing through the tube of the anthers; *stigma* bifid; *fruit* consisting of an achene and calyx, closely connected, and enclosing the embryo; the achene one-celled, articulated on the receptacle, generally sessile, rostrate, or not rostrate at the apex; *seed* attached to the base of the fruit by a very short funiculus; *embryo* erect; *radicle* short, straight, inferior; *plumula* inconspicuous; *florets* collected into dense heads (capitules), either all hermaphrodite, or the outer ones female or neuter, the inner being hermaphrodite, or male, or they are entirely composed of florets of distinct sexes; *capitules* with the florets sometimes all tubular, sometimes all ligulate, sometimes the central florets are tubular and the outer ones ligulate; *involucre* of one or many rows, of more or less united scales, surrounding the receptacle. *Herbs*, or *shrubs*, rarely *trees*, forming almost a tenth part of the vegetable kingdom; *leaves* simple, alternate, or opposite.

ACHILLEA. (De Cand. vi. 24.)

ACHILLEA AGERATUM. (Linn.) *Ageratum, Eupatorium mesues, Sweet maudlin.* South of Europe.

Stomachic, cordial, cephalic.

*ACHILLEA MILLEFOLIUM. (Linn.) (E. B. 758.) *Millefolium, Milfoil, Yarrow.*

Fl. white, sometimes rose-coloured. June, September. Perennial. Dry hilly pastures.

ACHILLEA NOBILIS. (Linn.) *Showy Milfoil.* South of Europe.

Astringent, tonic, and vulnerary, used in hæmorrhages, and externally in headache, tumours, &c.; added to beer to render it more intoxicating, and lately recommended to smokers in lieu of tobacco; root warm, used for contrayerva; Dr. Stokes, of Dublin, has found milfoil useful in dropsies.

ACHYROPHORUS. (De Cand. vii. 92.)

*ACHYROPHORUS MACULATUS. (Scop.) (E. B. 225.) *Hypochœris maculata.* (Linn.) *Herba costa, Hungarian hawk-weed, Spotted cat's ear.*

Fl. deep yellow. July. Perennial. Open chalky and limestone pastures.

Used in pulmonary affections, and pains of the side.

ADENOSTYLES. (De Cand. v. 203.)

ADENOSTYLES GLABRA. (D. C.) *Cacalia alliariafolia.* (Lamb.) *Cacalia alpina.* (Jacq.) *Tussilago cacalia.* (Scop.) *Cacalia alpina.* (Linn.) *C. glabra.* (Vill.) Alps of France, Italy, &c.

The leaves have been recommended in coughs. (L.)

AMBROSIA. (De Cand. v. 525.)

AMBROSIA MARITIMA. (Linn.) South of Europe.

Cardiac, cephalic, astringent.

ANACYCLUS. (De Cand. vi. 15.)

ANACYCLUS PYRETHRUM. (D. C.) *Anthemis pyrethrum.* (Linn.) *Chamæmelum specioso flore radice fervente.* (Shaw.) *Pellitory of Spain.* Barbary, &c.

The root is imported from the Levant under the name of *Pellitory of Spain.* It is brownish externally, whitish internally; its taste is hot, acrid, and permanent, depending on a fixed acrid oleo-resin deposited in vesicles in the bark; this oleo-resin renders the root a powerful rubefacient and stimulant. It is principally employed as a masticatory in rheumatic affections of the face, or in the form of tincture in the tooth-ache. Sometimes gargles are made of it, and used in relaxations of the uvula. Internally it has been taken as a gastric stimulant. (L. *ex* Pereira.) The powder is used in large quantities by the Mahometans to excite transpiration, being rubbed on the skin; it is also used internally as a cordial and stimulant in lethargy and palsy, and in certain stages of typhus fever. (Ainslie.) The root is pickled while young as a sauce. (G.)

ANACYCLUS RADIATUS. (Lois.) *Anthemis valentina.* (Linn.) *Buphthalmum, Ox-eye.* South of Europe.

Vulnerary, aperitive, dyes a good yellow. (G.)

ANTHEMIS, (De Cand. vi. 4.)

ANTHEMIS ARVENSIS. (Linn.) (E. B. 602.) *Chamæmelum arvense.* (All.) *Corn chamomile, Wild chamomile.*

Fl. disk yellow, ray white. July. Biennial. Corn fields.

*ANTHEMIS NOBILIS. (Linn.) (E. B. 980.) *A. odorata.* (Lamb.) *A. aurea.* (Brot.) *Chamæmelum nobili.* (All.) *Chamæmelum, Common chamomile.*

Fl. disk yellow, ray white. August. Perennial. Dry heaths.

Chamomile heads, in the shops called *flowers,* contain a volatile oil, resin, and bitter extractive; the oil and resin render them stimulant, while the bitter extractive communicates tonic properties; the warm infusion is used externally as a fomentation, and internally to promote vomiting; the cold infusion, or the extract, is taken as a tonic, in any cases in which tonic substances are indicated, as dyspepsia. (Pereira.) Chamomile in substance has, in some instances, proved useful in intermittents; Dr. Schall affirms that it is not only an effectual pre-

ventitive of nightmare, but the sole certain remedy for that complaint. (Burnett.)

*ANTHEMIS TINCTORIA. (Linn.) (E. B. 1472.) *Chamæmelum tinctorium.* (Ail.) *Ox-eye chamomile.*

Fl. yellow. July, August. Perennial. Durham, Essex.

Flowers dye a good yellow.

ARNICA. (De Cand. vi. 316.)

ARNICA MONTANA. (Linn.) *Doronicum montanum.* (Lamb.) *German leopard's bane, Mountain tobacco.* Meadows of the cooler part of Europe.

Root discussive; leaves attenuant, diaphoretic, and diuretic; in large doses they induce vomiting, until the stomach is used to them. The emetic action of Arnica was found by M. Dupuytren to depend on particles of down which remain suspended in the infusion; hence the necessity of filtering. Much used in bruises from falls; flowers have been substituted for Peruvian bark in intermittents and gangrenes. In their effects the flowers are stimulating, and when administered in small doses, they are very beneficial in raising the pulse, in exciting the action of the entire sanguiferous system, in checking diarrhœas, and particularly in removing paralytic affections of the voluntary muscles; they have also been recommended in chronic rheumatism, in retention of urine from paralysis of the bladder, and in amaurosis. (G.) It is said to owe its noxious qualities to the presence of cytisine. The activity of Arnica seems, however, to have been exaggerated. It has been recommended in the cure of putrid fever, ague, palsy, amaurosis, &c. &c., and on the continent is called *Panacea lapsorum.* (L.)

ARONICUM. (De Cand. vi. 319.)

ARONICUM SCORPIOIDES. (D. C.) *Arnica scorpoides.* (Linn.) *Doronicum grandiflorum.* (Lamb.) *Grammarthron scorpioides.* (Cass.) *Doronicum radice dulci, Creeping leopard's bane.* Alps of Europe.

Roots aromatic, used by sportsmen in Alpine countries against giddiness.

ARTEMISIA. (De Cand. vi. 92.)

**ARTEMISIA ABROTANUM. (Linn.) *Abrotanum mas, Old man, Southernwood.* Native of south of Europe.

Fl. yellowish. September. Small shrub. Gardens.

Tops discussive, antiseptic, vermifuge and tonic. (G.) A powerful anthelmintic. (L.)

*ARTEMISIA ABSINTHIUM. (Linn.) (E. B. 1230.) *Absinthium vulgare.* (Lamb.) *Common wormwood.*

Fl. dingy yellow. August. Perennial. Waste places on chalky soils.

Bitter, stomachic, excites the appetite, promotes digestion, antiseptic and vermifuge; it was recommended by Haller for keeping off fits of the gout, for which it is said to have served the Emperor Charles V. This plant is thought to drive away insects from clothes and furniture, for which purpose it is often laid into drawers and chests in the country. A very bitter matter called *absinthin*, has been obtained from it. Brewers are said to add the fruit to their hops, to render beer more heady, and rectifiers to their spirits.

*ARTEMISIA CAMPESTRIS. (Linn.) (E. B. 338.) *Artemisia, Fine-leaved mugwort, Field southernwood.*

Fl. dusky yellow. August. Perennial. Dry sandy heaths. Rare.

Herb astringent, antiseptic, discutient.

ARTEMISIA CHINENSIS. China.

Chinese moxa has been said to be prepared from the downy leaves of this species.

ARTEMISIA DRACUNCULUS. (Linn.) *Dracunculus hortensis, Tarragon.* All the north of Russia in Asia.

Excites the appetite and the menses; heating; carminative; eaten as a potherb, and communicates a peculiar fine flavour to vinegar and to mustard. (G.) The inspissated juice of the leaves considered by many a powerful sudorific. (O'Sh.)

ARTEMISIA INDICA. (Willd.) Nepal, China, Japan.

Leaves slightly aromatic and bitter, considered in India as a powerful deobstruent and antispasmodic. (L.) Substituted for A. absinthium, but weaker. (O'Sh.)

ARTEMISIA JUDAICA. (Linn.) Syria, Egypt.

The seeds, *Worm seeds, Semen contra, S. cinæ*, used as a vermifuge, in doses of gr. x. to 3ss., three or four times a day; they are also stomachic; tansy seeds are substituted for them. (G.) *vide A. sieberi.*

ARTEMISIA MARITIMA. (Linn.) (E. B. 1706, and 1101, vars. α and β.) *Absinthium maritimum, Common Roman wormwood. Sea wormwood.*

Fl. yellow. September. Perennial. Sea-shores.

Properties the same as A. absinthium.

ARTEMISIA MOXA. (D. C.) *Absinthium moxa.* (Bess.) *Moxa weed.* China.

Described by Gray as *A. sinensis*, and *A. maderaspatana.* Down of the leaves, *Moxa*, formed into small cones, is burned on the place affected, in gout, rheumatism, diseases of the joints, &c. (G.) It is from the woolly leaves of this, and not A. Chinensis, that the Chinese prepare their moxa; this substance, employed as a convenient means of applying the actual cautery, is, however, obtained from many other plants. (L.)

ARTEMISIA PONTICA. (Linn.) *Artemisia balsamita.* (Willd.) *Absinthium Romanum, True Roman wormwood.* South Europe.

ARTEMISIA RUPESTRIS. (Linn.) *Artemisia grandiflora.* (Hoffm.) *Absinthium rupestre, Alpine wormwood.* Aland, Siberia.

Properties like those of A. Judaica. (G.) The latter is much esteemed as an application to injured parts, and also taken internally, and supposed to be tonic and diaphoretic. (O'Sh.)

ARTEMISIA SANTONICA. *Santonicum, Tartarian southernwood.* (W. B. 122.)

Properties the same as those of A. Judaica.

ARTEMISIA SIEBERI. (D. C.) *A. contra, A. glomerata.* Palestine.

According to Batka, this produces the substance called *Semen contra*, or *Barbotine*, a strong aromatic bitter drug imported from Aleppo and

Barbary as a vermifuge; it is employed in powder, in aqueous infusion, or in syrup. A beautiful crystalline substance called *santonine*, has been obtained from wormseed. It also yields volatile oil, resin, &c.

*ARTEMISIA VULGARIS. (Linn.) (E. B. 978.) *Artemisia, Mugwort.* Fl. whitish-yellow. August. Perennial. Hedges; common.

Tops active uterines, employed in decoction and as a bath; mixed with rice and sugar, are by the Chinese women used as a pessary. (G.)

Besides these, the following have been employed medicinally:—

A. PROCERA. (Willd.) A. ARBORESCENS. (Linn.) A. GLACIALIS. (Linn.) A. SPICATA. (Jacq.) and A. VALLESIACA. (All.)

ASTER. (De Cand. v. 226.)

ASTER AMELLUS. (Linn.) *Star-wort.* Middle and south of Europe. Leaves discussive, vulnerary, resolvent, and useful in angina.

ATRACTYLIS. (De Cand. v. 549.)

ATRACTYLIS HUMILIS. (Linn.) *Cirsellium humili.* (Gaertn.) South Europe.

Analogous to *Cnicus benedictus.* Flowers coagulate milk.

BACCHARIS. (De Cand. v. 398.)

BACCHARIS CONCAVA. (D. C.) *Molina concava.* (Ruiz et Pav.) *Baccharis tridentata.* (Pœpp.) *B. resinosa.* (Hook.) South America. Leaves dye a black colour.

BACCHARIS DEPENDENS. (Pers.) *Molina dependens.* (Ruiz et Pav.) South America.

BACCHARIS EMARGINATA. (Pers.) *Molina emarginata.* (Ruiz et Pav.) South America.

BACCHARIS OBLONGIFOLIA. (Spreng.) *Molina oblongifolia.* (Ruiz et Pav.) South America.

Vulnerary and consolidant.

BACCHARIS GENISTELLOIDES. (Pers.) *Conyza genistelloides.* (Lamb.) *Molina reticulata.* (Less.) Peru and Brazil.

This and B. venosa, a nearly-allied species, are called in Brazil *Carqueja dolce*, and *C. amarga*, on account of the quantity of bitter extractive matter they contain, and which is combined with a specific aroma; they are particularly useful in all intermittent fevers, and for all disorders in which Artemisia is employed in Europe. Both the extract and the decoction are used; it is particularly serviceable in chronic diseases of horses, which are very fond of this herb. (L. *ex Martius.*)

BACCHARIS PROSTRATA. (Pars.) *Molina prostrata.* (Ruiz et Pav.) South America.

Decoction used in dysury.

BELLIS. (De Cand. v. 304.)

*BELLIS PERENNIS. (Linn.) (E. B. 424.) *Bellis minor, Consolida minima, Day's eye, Daisy.*

Fl. with a white ray, in cultivated varieties red or variegated, and all semi-ligulate. April, October. Perennial. Pastures.

Root antiscrofulous; leaves in salads open the body; used in vulnerary fomentations.

BIDENS. (De Cand. v. 593.)

*BIDENS TRIPARTITA. (Linn.) (E. B. 113.) *Eupatorium cannabinum fœminum*, *Trifid burr marygold, Water hemp agrimony.*

Fl. yellowish. July. Annual. Wet places. Common.

Strong smelling, hepatic, vulnerary. (G.) The whole plant is acrid, and when chewed, excites salivation powerfully. (L.)

BIDENS CHRYSANTHEMOIDES. (Michx.) *Coreopsis bidens.* (Walt.) Carolina.

Has the same properties. (L.)

CALEA. (De Cand. v. 671.)

CALEA JAMAICENSIS. (Linn.) *Santolina Jamaicensis.* (Linn.) *Halbert weed.* West India islands.

The leaves contain a powerful bitter, and, steeped in wine or brandy, form a stomachic medicine in the West Indies; it is, however, not certain that this account does not rather apply to Neurolæna lobata (L.)

CACALIA. (De Cand. vi. 327.)

CACALIA KLEINIA. (Linn.) *Kleinia neriifolia.* (Haw.) India.

Decoction of the leaves given in rheumatism, syphilis, and lepra, and in similar cases to those in which sarsaparilla is given by European practitioners. (O'Sh.)

CALENDULA. (De Cand. vi. 451.)

CALENDULA ARVENSIS. (Linn.) *C. caltha. Caltha arvensis.* (Mönch.) *Caltha amplexifolia.* (Holl. et Reich.) *Field marygold, Wild marygold.* South of Europe.

Herb cordial.

**CALENDULA OFFICINALIS. (Linn.) *Caltha officinalis.* (Mönch.) *Caltha vulgaris.* (Bauh.) *Common marygold.*

Fl. yellow. Annual. Native of south of Europe.

Flowers cordial, hepatic, diaphoretic, and emmenagogue. (G.) Formerly much employed as a carminative, now chiefly used to adulterate saffron. (L.)

CARLINA. (De Cand. vi. 545.)

CARLINA ACANTHIFOLIA. (All.) *C. acaulis.* (Lamb.) *C. chardousse.* (Vill.) *C. utzka.* (Hacq.) *Chamæleon albus.* (Dalech.) South of Europe.

Receptacle esculent.

CARLINA GUMMIFERA. *Atractylis gummifera.*

Analogous to Cnicus benedictus; flowers coagulate milk.

CARLINA SUBACAULIS. (D. C.) *Carlina, C. acaulis.* (Linn.) *C. chamæleon.* (Vill.) *Carline thistle.* Mountains of Europe.

Root restorative; useful after great fatigue, when proper refresh-

ments cannot be procured; formerly in common use with military men and foot travellers.

*CARLINA VULGARIS. (Linn.) (E. B. 1144.) *Carline thistle, Prickly carline thistle.*

Fl. purplish, with a yellow ray of scales. June. Biennial. Dry hilly pastures.

Diuretic and diaphoretic; the dried calyx may serve as a hygrometer; in fine weather it opens horizontally, and is even sometimes reflexed; on the contrary, in wet weather it is closed.

CARTHAMUS. (De Cand. vi. 621.)

CARTHAMUS TINCTORIUS. (Linn.) *Carthamus, Cnicus tinctorius, Bastard saffron, Dyer's saffron.* East Indies.

Flowers, *Safflower*, used to colour broths, also in dyeing, and to adulterate saffron; the East Indian is oiled; seeds, *Parrots' corn*, purgative, emetic, yields oil. (G.) The most lovely tints are imparted by this dye to silk and cotton; *rouge* is a mixture of the dry carthamic acid and finely-powdered talc. The *pink saucers* used for giving a flesh tint to silk are prepared from this dye, with a small portion of soda. The Chinese *card rouge* is a carthamate of soda, colourless when applied, but being decomposed by the acid secreted by the skin, produces a most beautiful rosy tint. (O'Sh.)

CATANANCHE. (De Cand. vii. 83.)

CATANANCHE CŒRULEA. (Linn.) *Blue gum succory.*

Similar to wild succory.

CENTAUREA. (De Cand. vi. 565.)

CENTAUREA BEHEN. (Linn.) *Piptoceras Behen.* (Cass.) *Behen album.* (Ranw.) Persia.

Root, *White ben, Ben album, Rhapontic blanc, Rhubarbe indigène, Rhaponticum behen*, used for rhubarb; very astringent. (G.) Has similar properties to C. calcitrapa. (L.) A bitter tonic; used for seasoning among the Persians. (O'Sh.)

*CENTAUREA CALCITRAPA. (Linn.) (E. B. 125.) *Calcitrapa stellata.* (Lamb.) *Hypophœstum.* (Gaertn.) *Calcitrapa.* (Linn.) *Carduus stellatus, Star thistle.*

Fl. rose-coloured. July, September. Perennial. Gravelly and sandy places.

Root diuretic, deobstruent, lithontriptic; leaves alexiterial in infusion; seeds diaphoretic. (G.) Has been used as a febrifuge, and has even been preferred to gentian. (L.)

CENTAUREA CENTAURIUM. (Linn.) *Centaurium majus.* (Clus.) *Great centaury.* Alps, Italy.

Root vulnerary, astringent, antidysenteric. (G.) Has similar properties to C. calcitrapa. (L.)

*CENTAUREA CYANUS. (Linn.) (E. B. 277.) *Cyanus arvensis.* (Mönch.) *C. vulgaris.* (Lob.) *Jacea segetum.* (Lamb.) *Cyanus segetum*, (Bauh.) *Corn blue-bottle.*

Fl. of disk purple, of the ray blue. July, September. Annual. Corn fields.

Flowers cooling, astringent, make a fine blue wash colour. (G.) The distilled water was once so esteemed as an application to weak eyes, that the plant received the popular appellation of *Casse lunette*, or *Break your spectacles*. The fine azure colour prepared from the petals is much used by miniature painters. (O'Sh.)

*CENTAUREA JACEA. (Linn.) (E. B. 1678.) *Jacea nigra*, *Matfellon*, *Brown radiant knapweed*, *Knapweed*.

Fl. purple. August, September. Perennial. Waste places. Sussex.

Flowers cooling, astringent.

CENTAUREA MONTANA. (Linn.) *Cyanus major*, *Great blue-bottle*, *Mountain knapweed*.

Fl. of disk purple, of ray blue. June, August. Perennial. Native of the Alps.

Properties similar to those of C. cyanus.

*CENTAUREA SOLSTITIALIS. (Linn.) (E. B. 243.) *Calcitrapa solstitialis*. (Lamb.) *C. sicula*. (Leyss.) *Calcitrapa*, *St. Barnaby's thistle*, *Yellow star thistle*.

Fl. yellow. July, September. Annual. Borders of fields.

Herb and seed opening, deobstruent.

CENTAUREA STŒBE. (Linn.) South of Europe.

Flowers cooling, astringent.

CEPHALOPHORA. (De Cand. v. 661.)

CEPHALOPHORA GLAUCA. (Cav.) *Santolina tinctoria*. (Mol.) South America.

Affords a yellow dye.

CERADIA. (Lind. Veg. Kingd.)

CERADIA FURCATA. *Coral Plant*. The most sterile regions of the south-west coast of Africa, near Ichaboe.

The whole plant, bark, wood, and pith, abounds in a resinous juice, which concretes on exudation, forming a transparent yellowish resin, *Resin of Ceradia*, or *African bdellium*, which burns with a fragrant odour. The plant is named from its forked character, which, with the absence of leaves, excepting at the summits of the horn-like branches, gives it somewhat the appearance of coral.

CHAMÆPEUCE. (De Cand. vi. 657.)

CHAMÆPEUCE CASABONÆ. (D. C.) *Carduus polyacanthus*. (Lamb.) *Cnicus casabona*. (Willd.) *Cirsium trispinosum*. (Mönch.) *Lamyra triacantha*. (Cass.) *Polyacanthus casabonæ*. (Bauh.) *Acarna*, *Carduus casabona*. (Linn.) *Fish thistles*. Europe.

Eaten as a potherb while young.

CHONDRILLA. (De Cand. vii. 141.)

CHONDRILLA JUNCEA. (Linn.) *Rushy gum succory*. North of Europe.

Laxative, diuretic, used in dropsy.

CHRYSANTHEMUM. (De Cand. vi. 63.)

CHRYSANTHEMUM CORONARIUM. (Linn.) *Chrysanthemum Dioscoridis, Garden chrysanthemum.* South of Europe.

Flowers used to discuss steatomatous tumours.

*CHRYSANTHEMUM SEGETUM. (Linn.) (E. B. 540.) *Corn chrysanthemum.*

Fl. yellow. June, August. Annual. Corn fields.

Discussive and attenuant when used externally; and given against the jaundice, asthma, and shortness of breath.

CICHORIUM. (De Cand. vii. 83.)

**CICHORIUM ENDIVIA. (Willd.) *Cichorium, Seris, Garden endive.*

Fl. blue. August, September. Annual. Native of India.

Roots used as a potherb; blanched stem as a salad and potherb.

*CICHORIUM INTYBUS. (Linn.) (E. B. 539.) *C. agreste, Wild succory, Chicory.*

Fl. blue. July, August. Perennial. In gravelly and chalky soils.

Aperitive, hepatic, attenuant, used in fevers: root used for coffee. (G.) The root is said to be tonic, and in large doses aperient; it has been used in chronic, visceral, and cutaneous diseases, especially in the form of a decoction. (Pereira.) The root is extensively cultivated, especially in France, as a substitute for coffee; when full grown it is cut into dice, roasted, and ground down, when it cannot be distinguished by the eye from that substance; it agrees with it also in taste, but wants the pleasant aroma. The French maintain that the quality of coffee is improved by the addition of succory root, if not in too large a quantity. It certainly affords a most harmless means of adulterating it. (L.)

CIRSIUM. (De Cand. vi. 634.)

CIRSIUM ERIOPHORUM. (Scop.) *Carduus eriocephalus.* (Dod.) *Eriolepis lanigera.* (Cass.) *Carduus eriophorus.* (Linn.) *Cnicus eriophorus.* (Hoffm.) South of Europe.

Used in scirrhous tumours.

CIRSIUM LANATUM. (Spreng.) *Cnicus lanatus.* (Willd.) *Atractylis, Distaff thistle.* East Indies.

Root depurative.

CIRSIUM LANIFLORUM. (Bieb.) *Carduus eriophorus.* (Pall.) *Cnicus laniflorus.* (Bieb.) *Woolly-headed thistle. Friar's crown.* South of Europe, Persia.

Receptacle eaten as artichokes.

CIRSIUM MONSPESSULANUM. (All.) *Carduus monspessulanus.* (Linn.) *Melancholy thistle.* South of France, Spain.

Root bound on varices to assuage the pain of them.

CNICUS. (De Cand. vi. 606.)

CNICUS BENEDICTUS. (Linn.) *Carduus benedictus.* (Cam.) *Centaurea benedictus, calcitrapa lanuginosa.* (Lamb.) South of Europe, Persia.

Root diuretic, deobstruent, lithontriptic; leaves alexiterial in infusion, seeds diaphoretic. (G.) Once much used as a febrifuge, although now neglected. Mr. Burnett says that its properties are such as to lead us to a belief that it has been superseded by other not more efficacious remedies. (L.) Herb tonic and mildly diaphoretic; decoction causes vomiting; seeds diaphoretic. The cold infusion is employed as a tonic in debilitated conditions of the stomach. Taken warm in bed, the infusion has been given as a sudorific in various chronic diseases. The decoction has been employed to promote the operation of emetics. (Pereira.)

CYNARA. (De Cand. vi. 620.)

CYNARA CARDUNCULUS. (Linn.) *Chardoon.* South of France, &c.

Aperitive, diuretic, and aphrodisiac; flowers used to curdle milk; petioles and ribs of the leaves eaten as potherbs. (G.)

**CYNARA SCOLYMUS. (Linn.) *Cinara, Scolymus, Artichoke.*

Fl. purplish blue. August, September. Perennial. Native of the south of Europe.

Receptacle and base of the calyx scales eaten as a potherb; the bottoms are preserved in brine; infusion of the flowers used in rennet. (G.)

DIOTIS. (De Cand. vi. 34.)

*DIOTIS CANDIDISSIMA. (Desf.) (E. B. 141.) *D. maritima, Filago maritima.* (Linn.) *Santolina tomentosa.* (Lamb.) *Santolina maritima.* Smith.) *Otanthus maritimus.* (Link.) *Athanasia maritima.* (Linn.) *Gnaphalium legitimum.* (Gaertn.) *Santonica maritima, Cotton weed.*

Fl. yellow. August, September. Perennial. Sandy sea-shores, south of England.

Vermifuge; used to drive away insects from wardrobes.

DORONICUM. (De Cand. vi. 320.)

*DORONICUM PARDALIANCHES. (Linn.) (E. B. 2654.) *D. cordatum.* (Lamb.) *D. procurrens.* (Dumost.) *D. romanum, Great leopard's bane.*

Fl. yellow. June, July. Perennial. Mountains in the north of England.

*DORONICUM PLANTAGINEUM. (Linn.) (E. B. 630.) *D. minus, Plantain-leaved leopard's bane, Small leopard's bane.*

Fl. yellow. June, July. Perennial. Road sides. Salinghall, Essex.

Roots aromatic, used by sportsmen in alpine countries against giddiness.

ECHINOPS. (De Cand. vi. 522.)

ECHINOPS RITRO. (Linn.) *E. pauciflorus.* (Lamb.) *Ritro, Little globe thistle.* South of Europe.

Root astringent.

ECHINOPS SPHÆROCEPHALUS. (Linn.) *E. multiflorus.* (Lamb.) *E. maximus.* (Siev.) *Crocodilion, Globe thistle.* South of Europe.

Root used internally in bleeding of the nose; seed diuretic.

ECHINOPS STRIGOSUS. (Linn.) Spain, Portugal.

The down of the flower and the woolly leaves, *Spanish tinder*, used in Spain as amadou.

ELEPHANTOPUS. (De Cand. v. 85.)

ELEPHANTOPUS SCABER. (Linn.) East Indies.

A decoction of the leaves and roots are given on the Malabar coast in cases of dysuria. (L.)

ECLIPHA. (De Cand. v. 489.)

ECLIPHA ERECTA. (Linn.) *E. adpressa.* (Mönch.) *Verbesina alba.* (Linn.) *Cotula alba.* (Linn.) *Micrelium asteroides.* (Forsk.) West Indies. Asia Minor.

Juice used to dye the hair black.

EMILIA. (De Cand. vi. 301.)

EMILIA SONCHIFOLIA. (D. C.) *E. purpurea.* (Cass.) *Crassocephalum sonchifolium.* (Less.) *Cacalia sonchifolia.* (Wall.) East Indies, China.

Decoction of the leaves used in India as a febrifuge. (L.)

ERIGERON. (De Cand. v. 283.)

*ERIGERON ACRE. (Linn.) (E. B. 1158.) *E. vulgare.* (Linn.) *Trimorphæa vulgaris.* (Cass.) *Blue fleabane, Fleabane.*

Fl. yellow in the disk, purple in the ray. August, September. Perennial. Gravelly and chalky pastures, and walls.

*ERIGERON CANADENSE. (Linn.) (E. B. 2019.) *E. paniculatum.* (Lamb.) *Senecio ciliatus.* (Walt.) *Canadian fleabane*

Fl. yellowish white. August, September. Annual. Waste grounds and walls.

Are diuretic, lithontriptic, and vulnerary.

ERIGERON PHILADELPHICUM. (Linn.) *E. amplexicaule.* (Poir.) *Philadelphia fleabane.* North America.

Said to be a powerful emmenagogue; commonly used in the United States as a diuretic. (L.)

EUPATORIUM. (De Cand. v. 141.)

EUPATORIUM AYAPANA. (Vent.) *Eupatorium triplinerve.* (Vahl.) *Ayapana.* South America.

The infusion of this plant is said to be a powerful sudorific and alexipharmic; Heritier recommends it as an antidote against the bite of venomous serpents and malignant insects; for this purpose it is used in Brazil; a quantity of the bruised leaves, which is to be frequently changed, is laid on the scarified wound, and some spoonfuls of the expressed juice are from time to time administered to the patient, till he is found to be free from the symptoms, particularly the dreadful anxiety which follows the wounds of venomous reptiles. (Martius.)

*EUPATORIUM CANNABINUM. (Linn.) (E. B. 428.) *E. avicennæ, Hemp agrimony.*

Fl. pale-reddish purple. July, August. Perennial. Banks of rivers.

Herb bitter, hepatic, aperitive, useful in catarrh, cough, and cachexy, also diuretic and vulnerary; root purgative, used for jalap. (G.)

EUPATORIUM GLUTINOSUM. South America.

This is said by Hartweg to be the true *Matico* of the inhabitants of Quito and Riobamba, where it is much used as a styptic.

EUPATORIUM PERFOLIATUM. (Linn.) *E. connatum.* (Michx.) *Boneset, Cross wort, Thorough root, Thorough wax, Thorough wort.* North America.

All the parts bitter; a decoction of the leaves the most active form; a valuable tonic stimulant; used as a substitute for Peruvian bark in the cure of intermittent fevers in the United States; in large doses, in warm infusion and decoction, emetic, sudorific, and aperient; a good substitute for chamomile-flowers in facilitating the operation of an emetic. (L.)

EUPATORIUM PURPUREUM. (Linn.) North America.

Root, *gravel root*, lithontriptic.

EUPATORIUM TEUCRIFOLIUM. (Willd.) *Wild horehound.* North America

Astringent.

FILAGO. (De Cand. vi. 247.)

FILAGO ARVENSIS. (Linn.) *Gnaphalium arvense* (Willd.) *Filago paniculata.* (Mönch.) *Acharitherium arvense.* (Bluff et Fing.) *Oglifa arvensis.* (Cass.) South of Europe.

*FILAGO GERMANICA. (Linn.) (E. B. 946.) *Filago vulgaris.* (Lamb.) *F. cespitosa.* (Raf.) *F. rotundata.* (Mönch.) *Gnaphalium Germanicum.* (Willd.) *Gifola vulgaris.* (Cass.) *Impia Germanica.* (Bluff et Fing.) *Gnaphalium, Cudweed, Herb impious.*

Fl. scales yellowish, shining. July, August. Annual. Sandy and clayey pastures.

*FILAGO MINIMA. (E. B. 1157.) Variety of *F. montana.* (De Cand.) *Gnaphalium minimum.* (Smith.) *Filago minima.* (Pers.) *Logfia brevifolia.* (Cass.) *Least Cudweed.*

Fl. yellowish. July, August. Annual. Dry heaths.

FILAGO MONTANA. (Linn.) *Gnaphalium montanum.* (Willd.) *Xerotium montanum.* (Bluff et Fing.) *Logfia lanceolata.* (Cass.) *Gnaphalium gallicum.* (Wall.) France.

Roots, astringent and discussive.

GALINSOGA. (De Cand. v. 677.)

GALINSOGA PARVIFLORA. (Cav.) *G. quinqueradiata.* (Ruiz et Pav.) *Wiborgia acmella.* (Roth.) South America.

Vulnerary and antiscorbutic.

GLOSSOCARDIA. (De Cand. v. 631.)

GLOSSOCARDIA BOSWALLEA. (D. C.) *Verbesina Boswallea.* (Linn.) *Glossocardia linearifolia.* (Cass.) *Pectis meifolia.* (Wall.) East Indies.

Esculent, having the smell and taste of fennel.

GNAPHALIUM. (De Cand. vi. 221.)

*GNAPHALIUM LUTEO ALBUM. (Linn.) (E. B. 1002.) *G. conglobatum.* (Mönch.) *Jersey cudweed.*

Fl. yellow. July, August. Annual. Jersey, Cambridgeshire, &c.

Tops used in obstructions and colds.

*GNAPHALIUM SYLVATICUM. (Linn.) (E. B. 913. Var. α.) *G. tomentosum, Highland cudweed.*

Flower scales shining, with broad brown border. August. Perennial. Thickets and pastures, Scotland.

Flowers used in the violent running of the nose in children; slightly astringent and diaphoretic.

GRANGEA. (De Cand. v. 372.)

GRANGEA MADERASPATANA. (Poir.) *Artemisia maderaspatana.* (Linn.) *Cotula maderaspatana.* (Willd.) *Grangea Adansonii.* (Cass.) East Indies.

Leaves considered by the Indian doctors a valuable stomachic medicine; they are sometimes used in anodyne and antiseptic fomentations. (L.) Furnish moxa. (G.)

GUITZOTIA. (De Cand. v. 551.)

GUITZOTIA OLEIFERA. (D. C.) *Verbesina sativa, Kutrelloo, Kutsyelloo, Werinnua, Ramtill.* East Indies.

Seeds pressed for oil.

HIERACIUM. (De Cand. vii. 198.)

HIERACIUM GRONOVII. (Linn.) North America.

Leaves bruised used to destroy warts.

*HIERACIUM MURORUM. (Linn.) (E. B. 2082.) *Pulmonaria gallica, Golden lung-wort, Wall hawkweed.*

Fl. yellow. July, August. Perennial. Woods, and on walls and rocks.

Herb cordial and pulmonary.

*HIERACIUM PILOSELLA. (Linn.) (E. B. 1093.) *Auricula muris, Common mouse-ear, Common mouse-ear hawkweed.*

Fl. lemon yellow. May, July. Perennial. Banks and dry pastures.

Leaves sternutatory, vulnerary, astringent.

HELIANTHUS. (De Cand. v. 585.)

**HELIANTHUS ANNUUS. (Linn.) *H. platycephalus.* (Cass.) *Common sunflower.*

Fl. very large, yellow. August, September. Annual. Native of Peru.

Seeds oily, used in emulsions; young shoots boiled are aphrodisiac; flowers yield turpentine.

**HELIANTHUS TUBEROSUS. (Linn.) *Jerusalem artichoke.*

Fl. yellow. August, September. Perennial. Native of the Brazils.

Cultivated for culinary purposes.

Roots nourishing, diuretic; give the smell of turpentine to the urine; flowers yield turpentine.

HELICHRYSUM. (De Cand. vi. 169.)

*HELICHRYSUM ARENARIUM. (D. C.) *Gnaphalium arenarium, Stœchas citrina Germanica, German golden locks, Sand helichrysum.*

Fl. yellow, July, September. Perennial. Native of the south of Europe.

Herbs and tops stimulant; used in palsy.

HELICHRYSUM ORIENTALE. (Tourn.) *Chrysocome, Gnaphalium orientale.* (Linn.) *Oriental golden locks.* Island of Crete.

Root astringent.

HELICHRYSUM STŒCHAS. (D. C.) *Gnaphalium stœchas.* (Linn.) *Stœchas citrina, Eternal flower.* Sea-shores of south of Europe.

Tops used in obstructions and colds.

HOMOGYNE. (De Cand. v. 204.)

HOMOGYNE ALPINA. (Cass.) *Tussilago alpina.* (Linn.) *Alpine coltsfoot.* Alps, Europe.

Has similar properties to Tussilago farfara.

HYPOCHÆRIS. (De Cand. vii. 90.)

*HYPOCHÆRIS RADICATA. (Linn.) (E. B. 831.) *Achyrophorus radicatus.* (Scop.) *Hieracium officinale, Porcellites radicata.* (Cass.) *Seriola taraxacifolia.* (Salzm.) *Long-rooted cat's-ear, Long-rooted hawkweed.*

Fl. yellow. July. Perennial. Meadows and pastures.

Used in pulmonary affections and pains of the side.

INULA. (De Cand. v. 463.)

INULA BIFRONS. (Linn.) *Italian Inula.* South of Europe.

Leaves and flowers stimulating; used on the Continent.

*INULA CONYZA. (D. C.) (E. B. 1195.) *Baccharis, Conyza, C. squarrosa, Ploughman's spikenard, Great fleabane.*

Fl. yellow. August, October. Perennial. Chalky and clayey soil.

Root and leaves used in ointments, against the itch and farcy; and in wine, against the jaundice.

INULA GRAVEOLENS. (Desf.) *Conyza minor vera, Erigeron graveolens.* (Linn.) *Small fleabane.* South of Europe.

Herb diuretic.

*INULA HELENIUM. (Linn.) (E. B. 1546.) *Aster Helenium.* (Scop.) *Aster officinalis.* (All.) *Corvisartia Helenium.* (Merat et Cass.) *Enula Campana, Helenium, Elecampane.*

Fl. yellow. July, August. Perennial. Moist pastures.

Root aromatic, slightly bitter, tonic, diaphoretic, stomachic; useful in asthma, hooping-cough, and in uterine and exanthematous diseases; externally antipsoric; a decoction of the root said to cure the scab in sheep. (G.) Various preparations of the boiled root, mixed with sugar, have been recommended to promote expectoration, and to strengthen the stomach; some think a spirituous extract contains most of its aromatic and tonic properties: this plant is generally kept in rustic gardens, on account of many traditional virtues; the root contains a white starchy powder called *Inuline*, a volatile oil, a soft acrid resin, and a bitter extractive. (L. ex Per.) A decoction of the root is much praised as an application in several cutaneous diseases, especially those attended with a troublesome itching. (O'Sh.)

INULA VISCOSA. (Ait.) *Conyza major, Erigeron viscosum.* (Linn.) *Great fleabane.*

Herb suppurative.

KLEINIA. (De Cand. vi. 336.)

KLEINIA ANTIEUPHORBIUM. (De Cand.) *Caculia antieuphorbium.* Cape of Good Hope.

Serves as an antidote to Euphorbium.

LACTUCA. (De Cand. vii. 133.)

LACTUCA ELONGATA. (Muhl.) *Wild lettuce. Fire weed.* North America.

Herb narcotic; said to promote the secretions from the skin and kidneys.

LACTUCA PERENNIS. (Linn.) *Chondrilla prima, Gum succory.* Mountainous parts of Europe.

Herb restrains the menses.

**LACTUCA SATIVA. (Linn.) *Lactuca, Garden lettuce.*

Fl. yellow. August, September. Annual. Native country unknown.

Many varieties; has been substituted for opium in checking diarrhœa, allaying cough, and diminishing pain in rheumatism; leaves refreshing, slightly anodyne, laxative, antiphrodisiac. (G.) Yields a milk, which, when inspissated, resembles opium in appearance, smell, and effects; it has been said to procure calm and sleep, without some of the ill effects of opium; the drug is called officinally, *Thridace, Lettuce opium,* or *Lactucarium.* (L.)

*LACTUCA SCARIOLA. (Linn.) *Scariola, Italian lettuce, Prickly wild lettuce.*

Fl. yellow. August. Perennial. On waste ground.

*LACTUCA VIROSA. (Linn.) *Lactuca sylvestris major odore opii, Strong-scented wild lettuce.*

Fl. yellow. August. Biennial. Waysides, on chalky or clayey soil.

The inspissated juice has been given in dropsies arising from visceral obstruction; gently laxative, very diuretic, and somewhat diaphoretic, narcotic, and anodyne: occasions giddiness. (G.) The milky juice, when inspissated, has been substituted for opium. (L.) It requires to be administered in a sixfold dose. (O'Sh.)

LAPPA. (De Cand. vi. 661.)

*LAPPA MAJOR. (Gaertn.) (E. B. 1228.) *Arctium lappa.* (Willd.) *Bardana major, Lappa glabra, Great Burdock.*

Fl. purple. July. Biennial. Waysides, and in woods.

Young shoots, stripped, eaten as asparagus; root used in disorders of the skin; diaphoretic, diuretic; also useful in dropsy; seeds diuretic, diaphoretic, and slightly purgative. (G.)

*LAPPA MINOR. (D. C.) (E. B. 1228.) *Burdock.*

Fl. purple. July, August. Biennial. Waste places.

Root is reckoned tonic, aperient, sudorific, and diuretic; it has been used in the form of decoction in rheumatism and in diseases of the skin; Sir Robert Walpole praised it as a gout medicine, and others have considered it an excellent substitute for sarsaparilla; the fruit, which is bitter and slightly acrid, has been used as a diuretic. (L.) The root

deserves extensive trial; the seeds also are very likely to prove of value on further examination of their properties. (O'Sh.)

LAMPSANA. (De Cand. vii. 76.)

*LAMPSANA COMMUNIS. (Linn.) (E. B. 844.) *Lapsana communis. Common nipple wort.*

Fl. yellow. July, August. Annual. Sides of ditches, and cultivated ground,

Used for healing sore nipples.

LEUCANTHEMUM. (De Cand. vi. 45.)

*LEUCANTHEMUM VULGARE. (Lamb.) (E. B. 601.) *Bellis major, Chrysanthemum leucanthemum,* (Linn.) *Great daisy, Great white ox-eye, Ox-eye daisy.*

Fl. of disk yellow, ray white. June, July. Perennial, Dry pastures.

Properties same as those of Chrysanthemum segetum.

LEONTOPODIUM. (De Cand. vi. 275.)

LEONTOPODIUM ALPINUM. (Cass.) *Filago leontopodium.* (Linn.) *Gnaphalium leontopodium.* Mountainous parts of Europe.

Roots astringent and discussive.

LIATRIS. (De Cand. v. 128.)

LIATRIS SQUARROSA. (Willd.) *Serratula squarrosa.* (Linn.) North America.

Known in the southern part of the United States by the name of *Rattlesnake's master;* in case of being bitten by this reptile, they bruise the roots and apply them to the wound, while at the same time the patient drinks a decoction of it in milk. (Pursh.) The roots have a terebinthinous odour, and are reputed to be powerfully diuretic, and hence antisyphilitic; it is probable that other species of this genus, particularly L. scariosa and L. odoratissima, possess similar properties, at least that of being diuretic. (L.)

LINOSYRIS. (De Cand. v. 351).

LINOSYRIS VULGARIS. (Cass.) *Crinitaria linosyris.* (Less.) *Chrysocoma linosyris.* (Linn.) *German golden locks.* Middle and south of Europe.

Anthelmintic, deobstruent.

MADIA. (De Cand. v. 691.)

MADIA SATIVA. (Mol. et Don.) *M. sativa, M. viscosa, et M. mellosa.* (Willd.) *Madia.* California.

Seeds yield oil.

MARUTA. (De Cand. vi. 13.)

*MARUTA COTULA, (D. C.) (E. B. 1772.) *Anthemis cotula.* (Linn.) *A. fœtida.* (Lamb.) *M. fœtida.* (Cass.) *Chamæmelum fœtida. Cotula, May weed, Stinking Chamomile.*

Fl. dark yellow, ray white. July, August. Annual. Waste places.

Used in hysteric fits; and the juice in the king's evil. (G.) Every part of the plant is fœtid and acrid, blistering the skin when much handled. Its decoction is a strong and active bitter, in a dose of a teacupful producing copious vomiting and sweating. (L. ex Barton.)

MATRICARIA. (De Cand. vi. 50.)

MATRICARIA CHAMOMILLA. (Linn.) (E. B. 1232.) *Chamæmelum vulgara, Common chamomile, German chamomile.*

Flower disk yellow, ray white. August. Annual. Corn fields and waste grounds.

Emmenagogue, stomachic, carminative, anticolic, and used externally as a fomentation in nephritic pains.

MIKANIA. (De Cand. v. 187.)

MIKANIA GUACO. (H. et Bonpl.) *Guaco, Huaco.* South America.

Sudorific, alexiterial, used in bites of serpents and hydrophobia. (G.) Reputed in South America to be a powerful remedy for the wounds of venomous serpents; the imported extract having been tried in this country against hydrophobia, has produced no effect, and the remedy has fallen into disrepute; Dr. Hancock, however, asserts that the real alexipharmic guaco is an aristolochia. (L.)

MIKANIA OFFICINALIS. (Mart.) *Coroçoa de Jesu.* Brazil.

Leaves have an agreeable mixture of bitter, mucilaginous, and aromatic ingredients, and are therefore used with great success like Peruvian bark and cascarilla. It is said to be particularly efficacious as well in remitting fevers as in weakness of digestion; it is taken both in decoction and extract. (L. ex Martius.)

MIKANIA OPIFERA. (Mart.) *Eroa da cobra.* Brazil.

The expressed juice is used externally and internally, and the bruised bark, moistened with oil, is applied as a poultice in case of wounds caused by the bite of venomous serpents; it is said to effect a cure by its powerful diuretic action. (L. ex Martius.)

MULGEDIUM. (De Cand. vii. 247.)

MULGEDIUM PLUMIERI. (D. C.) *Sonchus plumieri, Sonchus Alpinus.* (Linn.) *S. cæruleus.* (Smith.) *S. montanus.* (Lamb.) *S. canadensis.* (With.) *Hieracium cæruleum.* (Scop.) *Cicerbita Alpina.* (Wallr.) *Aracium Alpinum.* (Monn.) South of Europe.

Calyx exudes resinous drops.

NABALUS. (De Cand. vii. 240.)

NABALUS SERPENTARIUS. (Hook.) *Prenanthes serpentaria.* (Pursh.) *Vejuco.* North America.

Persons inoculated with its juice are said to be insensible to the poison of serpents. (L.)

NOTOBASIS. (De Cand. vi. 660.)

NOTOBASIS SYRIACA. (Cass.) *Acarnus, Carduus Syriacus.* (Linn.) *Theophrastus' thistle.* South of Europe.

Eaten as a potherb while young.

ONOPORDON. (De Cand. vi. 617.)

*ONOPORDON ACANTHIUM. (Linn.) (E. B. 977.) *Acanthium, Common cotton thistle.*

Fl. purple. August. Biennial. Waste grounds and roadsides in a gravelly soil.

Flowers used to coagulate milk; receptacle eaten as artichokes. (G.)

OPORINIA. (De Cand. vii. 108.)

*OPORINIA AUTUMNALIS. (Don.) (E. B. 830.) *Leontodon autumnale.* (Linn.) *Hieracium minus, Small hawkweed, Autumnal hawkbit.*

Fl. yellow. August. Perennial. Meadows and pastures. Common.
Leaves sharpen the sight; laxative.

PACOURINA. (De Cand. v. 14.)

PACOURINA EDULIS. (Aubl.) *Pacourinopsis integrifolia.* (Cass.) Cayenne.

Receptacle and whole plant edible.

PALLENIS. (De Cand. v. 487.)

PALLENIS SPINOSA. (Cass.) *Buphthalmum spinosum.* (Linn.) *Aster atticus, Inguinalis, Yellow starwort.*

Vulnerary, used in buboes and other swellings of the groin.

PARTHENIUM. (De Cand. v. 531.)

PARTHENIUM INTEGRIFOLIUM. (Linn.) *Prairie Dock.* North America.

Has been used by Dr. Houlton in America, in the treatment of intermitting fever with perfect success. An infusion of the flowering tops was the preparation employed.

PETASITES. (De Cand. v. 206.)

*PETASITES VULGARIS. (Desf.) (E. B. 430, 431.) *Petasites, Tussilago petasites.* (Hopp.) *Butter bur.*

Fl. pale flesh colour. April, May. Perennial. Wet meadows and river sides.

Leaves used to dress ulcers; flowers strongly diaphoretic, useful in asthma; root used against the tape-worm. (G.)

PIQUERIA. (De Cand. v. 104.)

PIQUERIA TRINERVIA. (Cav.) *Ageratum febrifugum.* (Sess.) *Stevia febrifuga.* (Moc.) *Xoxonitztal, Yoloxiltic.* Mexico.

Used in Mexico as a remedy against intermittent fevers. (L.)

PLACUS. (De Cand. vii. 261.)

PLACUS LÆVIS. (Lour.) Cochin China.

PLACUS TOMENTOSUS. (Lour.)

Juices used to give a smell to cakes.

PTARMICA. (De Cand. vi. 19.)

*PTARMICA VULGARIS. (Blackw.) (E. B. 757.) *Achillea ptarmica.* (Linn.) *Ptarmica, Bastard pellitory, Sneezewort.*

Fl. white. July, August. Perennial. Moist meadows.

Leaves sternutatory; root acrid. (G.) The whole plant is pungent, promoting a flow of saliva; its dried leaves produce sneezing, but this is thought to be owing to their little sharp marginal teeth. (L. ex Smith.)

PULICARIA. (De Cand. v. 477.)

*PULICARIA DYSENTERICA. (Gaertn.) (E. B. 1115.) *Aster dysentericus.* (All.) *Inula conyzæa.* (Lamb.) *Aster undulus.*

(Mönch.) *Inula pulicaria.* (D'Un.) *Conyza media, Inula dysenterica.* (Linn.) *Middle-size fleabane, Common fleabane.*

Fl. yellow. September. Annual. Moist places. Common.

Tonic, used in diarrhœa. (G.) Linnæus states, on the authority of General Keith, that this plant cured the Russian army of the dysentery; but Haller speaks contemptuously of the medical virtues of this plant, as he says it abounds in earthy matter. (L. ex. Smith.)

PULICARIA ODORA. (Reich.) *Inula odora.* (Linn.) *Sweet-rooted starwort.*

Root aromatic.

*PULICARIA DENTATA. (D. C.) (E. B. 1196.) *Conyza, Inula pulicaria, Pulicaria, Small fleabane.*

Fl. yellow. September. Annual. Sandy hollows inundated in winter.

Drives away insects by its smell.

PYRETHRUM. (De Cand. vi. 53.)

*PYRETHRUM PARTHENIUM. (Smith.) (E. B. 1231.) *Matricaria parthenium.* (Linn.) *Common fever few.*

Flower of disk yellow, of the ray white. July. Perennial. Waste places.

The whole plant is bitter and strong scented, reckoned tonic, stimulating, and anti-hysteric. (Smith.) It was once a popular remedy in ague; its odour is said to be particularly disagreeable to bees, and that these insects may be easily kept at a distance by carrying a handful of the flower-heads. (L. ex Burnett.)

PYRETHRUM TANACETUM. (D. C.) *Balsamita major.* (Dod.) *B. vulgaris.* (Willd.) *B. suaveolens.* (Pers.) *B. mas.* (Blackw.) *Tanacetum balsamita.* (Linn.) *Cost mary.* South of Europe.

Leaves stomachic, cordial, cephalic, uterine; supposed to diminish the narcotic power of opium; seed vermifuge.

SANTOLINA. (De Cand. vi. 35.)

SANTOLINA CHAMÆCYPARISSUS. (Linn.) *Abrotanum fœmina, Chamæcyparissus, Lavender cotton.* South of Europe.

Vermifuge, used to drive away insects from wardrobes.

SANTOLINA FRAGRANTISSIMA. (Forsk.) Egypt, Palestine.

The flower-heads are extremely fragrant when dry, and are sold in the shops of Cairo as a substitute for chamomile, under the name of *Babouny*, or *Zeysoum.* Forskahl says the fresh juice of the plant is applied in affections of the eyes. (L.)

SCOLYMUS. (De Cand. vii. 75.)

SCOLYMUS HISPANICUS (Linn.) *S. perennis.* (Ger.) *S. congestus.* (Lamb.) *Myscolu microcephalus.* (Cass.) *Spanish cardoons.* South of Europe.

Root and young shoots esculent.

SCOLYMUS MACULATUS. (Linn.) *S. angyospermos.* (Gaertn.) *S. pectinatus.* (Cass.) *Golden thistle.* South of Europe.

Root used instead of eryngo.

SCORZONERA. (De Cand. vii. 117.)

SCORZONERA HISPANICA. (Linn.) *S. denticulata.* (Lamb.) *S. sativa.* (Gater.) *Scorzonera, Viper's grass.* Spain.

Eaten.

SCORZONERA PURPUREA. (Linn.) *S. subcœrulea, Hungarian viper's grass.* Germany, Bohemia, &c.

Eaten.

SENECIO. (De Cand. vi. 340.)

SENECIO CACALIASTER. (Lamb.) *Cacalia alpina, C. sarracenica.* (Linn.) South of France.

Used in coughs, the juice allays the tickling in the throat.

SENECIO DORIA. (Linn.) *Herba doria, Doria's wound wort.* South of Europe.

Leaves used internally, and externally in wounds and malignant ulcers.

SENECIO DORONICUM. (Linn.) *Solidago Doronicum.* (Linn.) *Doronicum Helveticum.* (Mill.) *Alpine groundsel.* South of Europe.

Infusion and steam of the infusion used in asthma.

*SENECIO JACOBÆA. (Linn.) (E. B. 1130.) *Jacobæa, Seggrum, Ragwort.*

Fl. yellow. July, August. Perennial. Waysides and pastures.

Used in poultices and colic pains; also as a gargle in sore throat.

*SENECIO SARRACENICUS. (Jacq.) (E. B. 2211.) *Consolida Saracenica. Broad-leaved ragwort, Saracen's wound wort.*

Fl. yellow. July, August. Perennial. Moist pastures in Westmoreland and Cumberland.

Leaves used as those of S. Doria.

SENECIO TOMENTOSUS. (Michx.) *Cineraria heterophylla.* (Pursh.) North America.

Bark yellow, powerfully anthelmintic.

*SENECIO VULGARIS. (Linn.) (E. B. 747.) *Erigeron, Common groundsel.*

Fl. yellow. Whole year. Annual. Waste grounds. Common.

Weak infusion a common purge; strong infusion or juice used as an emetic, and also given to horses to free them from botts; leaves externally suppurative; flowers given to song-birds as a cooler. (G.) A popular but useless vermifuge. (O'Sh.)

SERRATULA. (De Cand. vi. 667.)

*SERRATULA TINCTORIA. (Linn.) (E. B. 38.) *Serratula, Saw wort.*

Fl. purple. July, August. Perennial. Thickets. Common.

Vulnerary; dyes yellow with alum, but is inferior to woad.

SILYBUM. (De Cand. vi. 616.)

*SILYBUM MARIANUM. (Gaertn.) (E. B. 976.) *Silybum maculatum.* (Mönch.) *Cirsium maculatum.* (Scop.) *Carthamus maculatus.* (Lamb.) *Carduus mariæ, C. marianus, Milk thistle, Our Lady's thistle.*

Fl. purple. July. Perennial. Waste places. Wimbledon Common.

Pectoral, antipleuritic, aperitive. (G.) Full-grown leaves said to be sudorific and aperient. (L.)

SOLIDAGO. (De Cand. v. 330.)

SOLIDAGO CANADENSIS. (Linn.) *Canada golden rod.* North America.

With alum dyes wool, silk, and cotton a beautiful yellow.

SOLIDAGO ODORA. (Ait.) *S. retrorsa*, (Michx.) *American golden rod.* North America.

Leaves, *solidago*, *P. U. S.*, carminative, nervine, used as tea, and even exported in large quantities from America to China. (G.) Leaves delightfully fragrant, partaking of anise and sassafras, yielding a volatile oil, which is aromatic, gently stimulant, diaphoretic, and carminative ; also employed as an excellent substitute for tea. (L.)

SOLIDAGO VIRGA AUREA. (Linn.) (E. B. 301.) *Virga aurea*, *Golden rod.*

Fl. yellow. July, September. Perennial. Heaths and woods. Common.

Herb vulnerary, diuretic, useful in spitting of blood; infusion used in fevers.

SONCHUS. (De Cand. vii. 184.)

*SONCHUS ARVENSIS. (Linn.) (E. B. 674.) *Lepicanne spinulosa.* (Lapeyr.) *Hieracium spinulosum.* (Spreng.) *Hieracium, H. magus, Corn sow thistle, Great hawk weed.*

Fl. yellow. August. Perennial. Corn fields. Common.

*SONCHUS CILIATUS. (Lamb.) *S. oleraceus.* (Wallr.) *Common sow thistle.*

Var. *α.* (E. B. 343.) *Sonchus lævis, S. oleraceus lævis, Hare's lettuce, Smooth sow thistle.*

Var. *β.* (E. B. 2765.) *S. asper, S. oleraceus asper, Prickly sow thistle.* This variety is also referred to S. Fallax.

Fl. yellow. August. Annual. Waste places and cultivated ground.

These, and other species of this genus, as well as those of Picris, Crepis, Prenanthes, Hyoseris, &c., possess similar qualities with lettuce.

SPILANTHES. (De Cand. v. 620.)

SPILANTHES ACMELLA. (Linn.) *Verbesina acmella.* (Linn.) East Indies.

Diuretic, diaphoretic, attenuant, and anodyne; leaves and seeds used as tea.

SPILANTHES OLERACEA. (Jacq.) *Bidens fervida.* (Lamb.) South America.

When masticated, irritates the interior of the mouth, and provokes a copious flow of saliva. (G.) The whole plant, but especially the involucre and receptacle, act as a powerful stimulant to the salivary organs. (L.)

STENACTIS. (De Cand. v. 298.)

STENACTIS ANNUA. (Nees.) *Erigeron annuum.* (Pers.) *Diplopappus dubius.* (Cass.) *Stenactia dubia.* (Cass.) *Phalacroloma acutifolium.* (Cass.) *Pulicaria annua.* (Gaertn.) *Cineraria corymbosa.* (Mönch.) North America.

Employed in the United States as a diuretic. (L.)

TAGETES. (De Cand. v. 642.)

**TAGETES PATULA. (Linn.) *French marygold.*

Fl. dark yellow or orange brown. July, September. Annual. Native of Mexico.

Dried juice used in disorders of the eyes; flowers dye yellow.

TANACETUM. (De Cand. vi. 127.)

TANACETUM ANNUUM. (Linn.) *Heliochrysum, Golden cud weed.* Spain. South of France.

Herb emmenagogue, used in dyeing and for rheumatism.

*TANACETUM VULGARE. (Linn.) (E. B. 1229.) *Tansy.*

Fl. yellow. August. Perennial. Borders of fields and roads.

Every part is bitter, with a strong but not unpleasant scent. The qualities are esteemed of a tonic and cordial nature, expelling intestinal worms, and stengthening the digestive powers; the plant, however, does not agree with every stomach. (Smith.) Withering says, if meat is rubbed with tansy leaves, the flesh fly will not touch it. (L)

TARAXACUM. (De Cand. vii. 145.)

*TARAXACUM DENS LEONIS. (Desf.) (E. B. 510.) *T. officinale.* (Vill.) *T. Leontodon.* (Dumort.) *Leontodon vulgare.* (Lamb.) *Hedypnois Taraxacum.* (Scop.) *Dens Leonis, Leontodon taraxacum.* (Linn.) *Dandelion, Piss-a-bed.*

Fl. yellow. May, November. Perennial. Meadows and pastures.

Root, *Taraxaci radix*, diuretic, roasted and used as coffee; blanched leaves used in salads. The infusion, decoction, and extract of the root are tonic, and in large doses aperient; in some cases it acts as a diuretic; in the hepatic complaints of persons long resident in hot climates, it often affords very marked relief. (L.) Dose of the extract from three to ten grains thrice daily. (O'Sh.) It has been employed in decoction or extract in affections of the spleen, chronic cutaneous diseases, uterine obstructions, &c. (Pereira.)

TRAGOPOGON. (De Cand. vii. 112.)

*TRAGOPOGON PRATENSE. (Linn.) (E. B. 434.) *Go-to-bed at noon, Yellow Goat's beard.*

Fl. yellow. June. Perennial. Meadows and pastures.

*TRAGOPOGON PORRIFOLIUM. (Linn.) (E. B. 638,) *T. purpureum, Purple goat's beard, Salsify.*

Fl. purple. May, June. Perennial. Moist meadows.

Roots eaten as potherbs, opening, and supposed to be useful in affections of the chest; young roots also esculent. (G.)

TRIPOLIUM. (De Cand. v. 253.)

*TRIPOLIUM VULGARE. (Nees.) (E. B. 87.) *Aster tripolium.* (Linn.) *Sea starwort.*

Flower, disk yellow, ray purple. July, September. Salt marshes.

Root hydragogue.

TUSSILAGO. (De Cand. v. 208.)

*TUSSILAGO FARFARA. (Linn.) (E. B. 429.) *T. vulgaris.* (Lamb.) *T. rupestris.* (Vall.) *Farfara, Tussilago, Coltsfoot.*

Fl. yellow. March, April. Perennial. Moist clay soils.

Leaves form the basis of most of the British herb tobaccos; used also externally to diminish inflammation; an infusion of the dried leaves is much used as an expectorant in coughs and shortness of breath, as tea, or the steam is inhaled for the same purpose; a strong decoction of them is of considerable service in scrofulous cases; the downy substance on the under side of the leaf, dipped in a solution of saltpetre, and dried, is used as tinder; juice drunk liberally is serviceable in calculous complaints. (G.) The leaves, either smoked like tobacco, or taken in infusion, have been much employed against dyspnœa; it is a demulcent bitter, and acts by soothing irritation of the air passages; Dr. Pereira calls it a very slight tonic. (L.)

Vernonia. (De Cand. v. 15.)

Vernonia anthelmintica. (Willd.) *Conyza anthelmintica*, (Linn.) *Serratula anthelmintica*, (Roxb.) *Baccharoides anthelmintica*, (Mönch.) *Ascaricida Indica*, (Cass.) East Indies.

The fruit is accounted in India a very powerful anthelmintic. (L.) All the parts of the plant bitter. (O'Sh.)

Xanthium. (De Cand. v. 522.)

*Xanthium strumarium. (Linn.) (E. B. 2544.) *Bardana minor*, *X. lappa minor*, *Broad-leaved burdock*, *Small burdock*.

Fl. green. August, September. Annual. Waste ground. Rare.

Root bitter, antiscrofulous, and anticancerous.

Zacintha. (De Cand. vii. 178.)

Zacintha verrucosa. (Gaertn.) *Chicorium verrucarium*, *Lapsana zacintha*. (Linn.) *Wart succory*. South of Europe.

Herb diuretic, edulcorant, takes off warts.

Order 87.—LOBELIACEÆ. (De Cand. vii. 339.)

Calyx superior, five-lobed, or entire; *corolla* monopetalous, irregular, inserted in the calyx, five-lobed; *stamens* five, inserted alternately with the lobes of the corolla; *anthers* cohering; *ovary* inferior, 1—3 celled, ovules very numerous; *style* simple; *stigma* fringed; *fruit* a capsule, one or more celled, many-seeded, dehiscing at the apex; *seeds* attached either to the axis or the lining of the pericarp; *embryo* straight, in the axis of the fleshy albumen. *Herbs*, or *under-shrubs*, with alternate, exstipulate *leaves*, and axillary or terminal *flowers*.

Isotoma. (De Cand. vii. 412.)

Isotoma longiflora. (Presl.) *Hippobroma longiflora*. (Don.) *Lobelia longiflora*. (Willd.) *Rapuntium longiflorum*. (Mill.) *Rapunculus aquaticus*. (Sloan.) West Indies.

Juice corrosive. (G.) One of the most venomous of all known plants. Taken internally, it brings on fatal hypercatharsis; if any of the juice touches the lips or eyes, it produces violent burning inflammation. Horses are said to burst after feeding upon it, whence the Spanish West Indians call it *Rebenta cavillos*. (L.)

Lobelia. (De Cand. vii. 357.)

**Lobelia cardinalis. (Linn.) *Common cardinal flower.*

Fl. scarlet. July, August. Perennial. Native of Mexico. Root vermifuge.

Lobelia inflata. (Linn.) *Rapuntium inflatum.* (Mill.) *Bladder-podded lobelia, Indian tobacco.* North America.

Root, *Lobelia P. U. S.* used in leucorrhœa. (G.) An acrid narcotic, and most powerful emetic, used in asthma with great advantage; in small doses it is expectorant and diaphoretic, exciting expectoration without the pain of coughing; in such doses as a common tea-spoonful of the seeds and leaves, in which quantity irregular practitioners have ventured to give it, it frequently proves fatal in five or six hours; it has been used instead of tobacco in the form of enema, in strangulated hernia. (L.)

Lobelia syphilitica. (Linn.) *Rapuntium syphiliticum.* (Mill.) *Blue cardinal flower.* North America.

Root depurative, antivenereal. (G.) Root acrid and emetic, and has been used as a remedy for syphilis; it has the reputation of acting as a speedy cure for this disease, but European practice does not confirm its American reputation. Are not its curative properties volatile? (L.)

*Lobelia urens. (Linn.) (E. B. 953.) *Rapuntium urens.* (Mill.) *Acrid lobelia.*

Fl. purple. August, September. Perennial. Devonshire. Very rare.

Very active, reputed a poison.

Tupa. (De Cand. vii. 391.)

Tupa Feuillei. (Don.) *Lobelia tupa.* (Linn.) *Rapuntium tupa.* (Prest.) South America.

Plant and root poisonous in the extreme; acts as an emetic simply by smelling the flowers; juice caustic. (G.) Has similar properties to the last plant; its very flowers are said to produce vomiting by their smell.

Tupa cirsiifolia. (D. C.) *Lobelia cirsiifolia.* (Lamb.)

Very active, reputed a poison.

Order 88.—CAMPANULACEÆ. (De Cand. vii. 414.)

Calyx adnate to the ovary, generally five-lobed, persistent; *corolla* gamopetalous, inserted into the upper part of the tube of the calyx, five-lobed, generally regular and marescent, valvate in æstivation; *stamens* generally five, inserted into the calyx, beneath the corolla, distinct from it and alternate with its lobes; *anthers* generally distinct, sometimes slightly connate, oblong, two celled, with spherical pollen; *ovary* glandular above; *style* one, more or less hairy; *stigma* naked, 3—5 cleft; *capsules* three, rarely five-celled, dehiscing by 3—5 lateral apertures, or by incomplete valves at the apex; cells many-seeded; *seeds* attached to a central placenta of the cells; *embryo* straight, in the axis of a fleshy albumen; *radicle* inferior. *Herbs* with a milky juice and alternate *leaves*; *flowers* either distinct, or in involucrated heads.

CAMPANULA. (De Cand. vii. 457.)

CAMPANULA LACINIATA. (Linn.) *Medium, Syrian bell flower.* Greece, Syria.

Roots restrain the menses; seeds stimulate their expulsion.

**CAMPANULA MEDIUM. (Linn.) *Viola mariana, Canterbury bells, Coventry bells.*

Fl. purple, blue, or white. July, September. Biennial. Native of the South of Europe.

Root used as a potherb; cooling.

*CAMPANULA PATULA. (Linn.) (E. B. 42.) *C. Bellidifolia.* (Lapeyr.) *C. decurrens.* (Linn.) *Field bell flower, Spreading bell flower.*

Fl. dark blue. July, August. Biennial. Pastures and hedges in south-east of England. Rare.

Leaves lactescent, bitter.

*CAMPANULA RAPUNCULUS. (Linn.) (E. B. 283.) *Rapunculus esculentus, Rampions, Rampion bell flower.*

Fl. blue. July, August. Perennial. In the southern and eastern counties, in gravelly soil.

Root esculent, far more delicate than turnips or radishes; juice odontalgic; seeds ophthalmic.

*CAMPANULA TRACHELIUM. (Linn.) (E. B. 12.) *C. urticifolia.* (Schm.) *C. plicatula.* (Dumort.) *Trachelium, Canterbury bells, Great throat wort, Nettle-leaved bell flower.*

Fl. violet blue. July, August. Perennial. Woods.

Root eaten in salads; herb astringent; recommended in quinsey, tumours, and inflammation of the mouth.

JASIONE. (De Cand. vii. 415.)

*JASIONE MONTANA. (Linn.) (E. B. 882.) *J. undulata.* (Lamb.) *Annual sheep's scabious, Hairy sheep's scabious.*

Fl. blue. June, August. Annual. Dry heathy pastures.

Herb astringent; used in inflammations of the mouth and neighbouring parts.

PHYTEUMA. (De Cand. vii. 450.)

*PHYTEUMA ORBICULARE. (Linn.) (E. B. 142.) *Rapunculus corniculatus, Horned rampions, Round-headed rampion.*

Fl. blue. August, September. Perennial. Chalky hills.

Herb used in syphilis.

*PHYTEUMA SPICATUM. (Linn.) (E. B. 2598.) *Spiked rampion.*

Fl. greenish white. June, July. Perennial. Sussex.

Root astringent, used in quinsey.

ORDER 89.—VACCINIEÆ. (De Cand. vii. 552.)

Calyx adherent, persistent, or deciduous; *corolla* epigynous, gamopetalous, 4—5—6 divided, the divisions alternating with the segments of the calyx; *stamens* double the number of the lobes of the corolla, epigynous, filaments free or monadelphous; *anthers* terminal, often two-horned, opening by pores; *ovary* single; *style* one; *stigma* one,

simple; *berry* persistent, crowned by the calyx, 4—5 celled, the cells one, or many-seeded; *embryo* straight, in the axis of a fleshy albumen; *cotyledons* very short; *radicle* long, inferior. *Under-shrubs* with coriaceous alternate *leaves.*

Oxycoccus. (De Cand. vii. 576.)

Oxycoccus macrocarpus. (Pers.) *Vaccinium macrocarpum.* (Ait.) *V. hispidulum.* (Wang.) *American cranberry.* North America.

Berries esculent, used in tarts; imported in large quantities from North America, preserved in water.

*Oxycoccus palustris. (Pers.) (E. B. 319.) *Vaccinium oxycoccus.* (Linn.) *Cranberry.*

Fl. bright rose colour. June. Under shrub. In peat bogs.

Properties the same as those of O. Macrocarpus.

Phalerocarpus. (De Cand. vii. 577.)

Phalerocarpus serpyllifolia. (Don.) *Vaccinium hispidulum.* (Linn.) *Arbutus filiformis.* (Lamb.) *Gaultheria serpyllifolia.* (Pursh.) *Glyciphylla hispidula.* (Raf.) *Oxycoccus hispidulus.* (Pers.) *White cranberry.* North America.

Berries esculent, used in tarts.

Vaccinium. (De Cand. vii. 565.)

*Vaccinium Myrtillus. (Linn.) (E. B. 456.) *Myrtillus, Vaccinia, Common bilberry.*

Fl. green, with a red tinge. May. Small shrub. In mountainous districts.

Berries, *black whortle berries, bilberries*, acidulous, refreshing, useful in fevers; also antiscorbutic; would make wine; dried berries, *berry dye*, imported from Germany to colour wines.

*Vaccinium uliginosum. (Linn.) (E. B. 381.) *Great bilberry.*

Fl. flesh-coloured. May. Small shrub. Mountain bogs.

*Vaccinium Vitis idæa. (Linn.) (E. B. 598.) *Red whortle berry*, or *Cowberry.*

Fl. pale flesh colour. May, June. Small shrub. Dry heaths.

Leaves sold for those of Uva ursi, but are veined in a net-work above, dotted underneath, and their infusion precipitates neither isinglass jelly, nor a solution of green vitriol.

Order 90.—ERICACEÆ. (De Cand. vii. 580.)

Calyx 4—5 cleft, generally equal, persistent, entirely free from the ovary; *corolla* monopetalous, regular 4—5 cleft, sometimes of 4—5 petals, imbricate in æstivation; *stamens* in general twice as many as the divisions of the corolla; *anthers* bilocular, terminated by two horn-like appendages at the summit or base, and dehiscing in general by a pore near the summit; *ovary* surrounded at the base by a hypogynous disk, or by scales, many-celled, many-seeded; *style* simple, straight; *stigma*, with as many lobes as there are cells in the ovary; *fruit* capsular, opening by as many valves as there are cells; *seeds* minute; *embryo* cylindrical, in the midst of a fleshy albumen; *radicle* opposite the hilum. *Shrubs*, or *under-shrubs*, with evergreen, simple, rigid, whorled, or alternate *leaves.*

Roots and leaves mostly astringent, sometimes narcotic; berries often esculent. The brown powder that adheres to the petioles of

almost every species of Kalmia, Andromeda, and Rhododendron, is used in America as snuff.

ANDROMEDA. (De Cand. vii. 606.)

*ANDROMEDA POLIFOLIA. (Linn.) (E. B. 713.) *Rhododendron polifolium.* (Scop.) *Marsh andromeda, Rosemary-leaved andromeda, Wild rosemary.*

Fl. rose-coloured. June. Small shrub. Peat bogs.

Used in fomentations and baths against rheumatism and paralytic affections, causing perspiration; dyes a fine yellow, and tans leather.

ARBUTUS. (De Cand. vii. 581.)

ARBUTUS ANDRACHNE. (Linn.) *Andrachne, Strawberry bay.* Greece, Cyprus.

Fruit acerb and austere, but esculent.

ARBUTUS INTEGRIFOLIA. (Lamb.) *Andrachne Theophrasti.* (Clus.) Island of Crete.

Berry esculent.

*ARBUTUS UNEDO. (Linn.) (E. B. 2377.) *Common arbutus, Strawberry-tree.*

Fl. greenish white. September, October. Small tree. Ireland.

Fruit astringent, yields sugar. (G.) A wine is made from the fruit in Corsica, but it is reported to be narcotic if taken in quantity. (L.)

ARCTOSTAPHYLOS. (De Cand. vii. 584.)

*ARCTOSTAPHYLOS ALPINA. (Spreng.) (E. B. 2030.) *Arbutus Alpina.* (Linn.) *Black bear berry.*

Fl. white, with a tinge of pink. May. Trailing shrub. Highland mountains.

Berry esculent.

*ARCTOSTAPHYLOS UVA URSI. (Spreng.) (E. B. 714.) *Arbutus buxifolia.* (Stok.) *Uva ursi buxifolia.* (Sal.) *Uva ursi procumbens.* (Mönch.) *Arbutus uva ursi, Uva ursi, Red bear berry.*

Fl. rose-coloured. May. Trailing shrub. North of England.

Leaves *Uvæ ursi folia*, bitter, astringent; used in disorders of the urinary passages, and thought to be lithontriptic. (G.) Used in nephritic and calculous cases; of very doubtful action in the latter, but believed to be a decided palliative in nephritic complaints; also employed in dysuria, catarrhus vesicæ, leucorrhœa, and gonorrhœa; exhibited in the form of decoction, and power of the leaves; its action is slow, and it therefore requires to be given for a considerable period; although the effects are uncertain, they sometimes give astonishing relief. (L. ex Pereira.)

AZALIA. (De Cand. vii. 715.)

AZALIA PONTICA. (Linn.) *A. arborea.* (Linn.) *Rhododendron flavum.* (Don.) Georgia, Asia Minor.

Dioscorides asserted that the honey collected about Heraclea, in Pontus, produced alienation of mind, with profuse perspiration; and it has been believed that the pestilence which attacked the soldiers of

Xenophon, in the famous retreat of the 10,000, was caused by the quantity of this honey then eaten. Tournefort ascribed the poison to the flowers of Rhododendron ponticum and Azalia pontica; but Pallas is of opinion that the latter alone is the cause; he says that the effects of the Euxine honey are like those of Lolium temulentum, and occur in a country where no Rhododendron grows; the natives are well aware of the deleterious qualities of the plant, and it is related that goats which browse on the leaves before the pastures are green, suffer in consequence; and, moreover, that cattle and sheep perish. (L.)

ERICA. (De Cand. vii. 613.)

Various species of heaths, as E. vulgaris, E. herbacea, E. purpurascens, are used in fomentations and baths against rheumatism and paralytic affections, causing a perspiration; dye a fine yellow, and tan leather.

GAULTHERIA. (De Cand. vii. 592.)

GAULTHERIA PROCUMBENS. (Linn.) *Winter-green*, *Box berry*, *Chequer berry*, *Partridge berry*, *Mountain tea.* North America.

Leaves, *Gaultheria*, *P. U. S.*, used for tea. (G.) Fruit contains an aromatic, sweet, highly pungent, volatile oil, which is antispasmodic and diuretic; a tincture has been useful in diarrhœa. Coxe states, that the infusion is useful in asthma; it is used in North America as tea; the brandy, in which the fruit has been steeped, is taken in small quantities, in the same way as common bitters. (L.) Has been employed as an emmenagogue, and with the view of increasing the secretion of milk; but its chief use is to impart an agreeable flavour to mixtures and other preparations. It is used in the form of infusion, and also of an oil, which last is more used in regular practice than the leaves; instances of death are on record, resulting from the use of the oil by mistake, in the quantity of about a fluid ounce; on examination after death, strong marks of inflammation of the stomach were discovered. (Wood and Bache's *American Dispensatory.*) The oil, *Oleum gaultheriæ*, which is obtained by distilling the plant with water, is said to be identical with *salicylate of oxide of methyle*, having the composition (C^2 H^3 O+C^{14} H^5 O^5). It is used in perfumery.

KALMIA. (De Cand. vii. 729.)

KALMIA LATIFOLIA. (Linn.) *Calico bush*, *Ivy*, *Lambkill*, *Laurel*, *Mountain laurel*, *Spoonwood.* United States.

Leaves poisonous to many animals; are reputed to be narcotic, but their action is feeble and unimportant. Bigelow states, that the flesh of pheasants which have fed upon the young roots is poisonous to man, and some cases of severe illness are on record, which have been ascribed to this cause alone. The flowers exude a sweet honey-like juice, which is said when swallowed to bring on intoxication of a phrenetic kind, which is not only formidable in its symptoms, but very lengthened in its duration. (Bigelow.) A brown powder, which adheres to the shoots, acts as a sternutatory. (L.) Bees and wasps feed upon the honey-like secretion, which renders the honey of the former powerfully intoxicating. (O'Sh.)

LEDUM. (De Cand. vii. 730.)

LEDUM LATIFOLIUM. (Ait.) *Græulandicum.* (Retz.) *L. palustre latifolium.* (Michx.) *Wiserpukki, Wishecumpuoware, Labrador tea.* North America.

Leaves used for tea. (G.) The leaves, infused in beer, render it unusually heady, producing headache, nausea, and even delirium; they have nevertheless been used, it is said, with advantage in tertian agues, dysentery, and diarrhœa. (L. ex Pallas.) Odour aromatic and resinous; the infusion of the leaves stomachic, but induces giddiness if too strong. (O'Sh.)

LEDUM PALUSTRE. (Linn.) *Marsh cistus, Wild rosemary.* North of Europe.

Root astringent. (G.) Has the same properties as the last. (L.)

LEUCOTHOE. (De Cand. vii. 601.)

LEUCOTHOE MARIANA. (D. C.) *Andromeda Mariana.* (Linn.) North America.

Decoction used as a narcotic.

LOISELEURIA. (De Cand. vii. 714.)

*LOISELEURIA PROCUMBENS. (Desv.) (E. B. 865.) *Azalea procumbens.* (Linn.) *Procumbent azalea.*

Fl. flesh-coloured. May, June. Small shrub. Highland mountains.

Bark and leaves astringent. (G.) Has the reputation of being useful as an astringent medicine. (L.)

PERNETTYA. (De Cand. vii. 586.)

PERNETTYA MUCRONATA. (Gaudich.) *Arbutus mucronata.* (Linn.) South America.

Berries esculent.

RHODODENDRON. (De Cand. vii. 719.)

RHODODENDRON CHRYSANTHUM. (Pall.) *R. officinale.* (Salisb.) *Yellow rhododendron.* North of Asia.

The leaves are decidedly narcotic in a remarkable degree; this was first noticed by Stetter, a Russian botanist, who had a tame deer, which became so intoxicated by browsing on about ten of the leaves, that after staggering about for some time, it dropped into a deep but troubled sleep for the space of four hours, after which it awoke free from all sign of suffering, but never would touch the leaves again; after this, Stetter's servants took to intoxicating themselves with the leaves, without any bad effects. Pallas and Koelpin assert, that a strong decoction of the leaves is of the greatest service in chronic rheumatism, and even in venereal complaints, but that it is dangerous in acute rheumatism. Its value, as a means of removing arthritic complaints, has also been highly spoken of. Finally Pallas mentions an inveterate case of nervous sciatica, which had brought the patient to a state of lameness and deplorable emaciation, which was completely cured by perseverance in the use of the leaves for two years; no subsequent inconvenience was experienced, nor any signs of habitual drunkenness, although the dose was as much as four fluid ounces of the concentrated infusion daily. (L.)

RHODODENDRON MAXIMUM. (Linn.) *American rosebay.* North America.

An astringent, but not narcotic, according to Bigelow: Barton, however, asserts that it is certainly a poison. (L.)

RHODODENDRON FERRUGINEUM. (Linn.) *Dwarf rosebay.* South of Europe.

RHODODENDRON PONTICUM. (Linn.) West of Persia, Georgia.

Reported to be deleterious, and to be among the plants whose nectar renders the honey of Trebisond poisonous; but this statement of Tournefort is contradicted by Guldenstædt. Vide *Azalea Pontica.* (L.) The leaves of all these rhododendrons are austere, astringent, bitter, stimulant, diaphoretic, and narcotic; used against rheumatism and the gout; ʒij. of the dried leaves infused in half a pint of water, kept hot all night, and drank in the morning; roots astringent. (G.)

ORDER 91.—PYROLACEÆ. (De Cand. vii. 772.)

Calyx of 4—5 inferior persistent sepals; *corolla* of five petals, sometimes free, or more or less united, imbricated in æstivation; *stamens* twice as numerous as the petals, not adnate to the petals; *anthers* bilocular, dehiscing by two pores; *ovary* 3—5 celled, placed upon a hypogynous disc; *style* one; *stigma* subrotund or lobate, sometimes subindusiate; *fruit* capsular, 3—5 celled, with central placentæ; *seeds* minute, numerous, winged; *embryo* minute, at the base of the fleshy albumen. *Herbaceous plants* with simple, entire, or toothed *leaves.*

CHIMAPHILA. (De Cand. vii. 775.)

CHIMAPHILA UMBELLATA. (Nutt.) *Pyrola umbellata.* (Linn.) *Chimaphila corymbosa.* (Pursh.) *American winter green, Pipsissewa.* North America, Europe, Asia.

An infusion of the leaves has been found efficacious as a diuretic in dropsy. (G.) Astringent, tonic, sudorific, and diuretic. It is especially active in the last-named property, combining a speedy diuretic with much tonic power. (O'Sh.) The infusion of the dried leaves, taken internally, acts as an agreeable tonic; it promotes the action of the secreting organs, more especially the kidneys, over which, indeed, it has appeared to exercise a specific influence, increasing the quantity of urine, diminishing, as some have imagined, the quantity of lithic acid, or lithates secreted, and beneficially influencing several forms of chronic nephritic disease; its qualities are in every respect analogous to those of Uva ursi; it has been employed in dropsy, chronic affections of the urinary organs, and in scrofula, in which last its reputation in America is so high, that it has obtained the title of king's cure; it is given in the form of a decoction or extract; the latter has been employed in doses of ten or fifteen grains. (Pereira)

PYROLA. (De Cand. vii. 772.)

*PYROLA ROTUNDIFOLIA. (Linn.) (E. B. 213.) *P. declinata.* (Mönch.) *Pyrola, Round-leaved winter green.*

Fl. white. July, September. Perennial. Woods in Norfolk, Suffolk, &c. Rare.

Vulnerary.

*Pyrola secunda. (Linn.) (E. B. 307.) *Pyrola altera*, *Serrated winter green*, *Small winter green.*

Fl. greenish white. July. Perennial. Yorkshire. Rare. Scotland. Herb cooling, drying; leaves diuretic, used in dropsy.

Sub-class III.—COROLLIFLORÆ.

Order 92.—SAPOTACEÆ. (De Cand. viii. 154.)

Calyx five, or rarely 4—8 parted, or 4—8 lobed, lobes persistent, either in one or two rows; *corolla* gamopetalous, deciduous, its segments usually equal in number to those of the calyx, and alternating with them, seldom twice or thrice as many; *stamens* arising from the corolla, definite, distinct, the fertile ones equal in number to the segments of the calyx, and opposite those segments of the corolla which alternate with the latter, seldom more; *anthers* usually turned outwards, bilocular; the sterile stamens as numerous as the fertile ones, with which they alternate, sometimes wanting; *ovary* with several cells, which are often opposite to the lobes of the calyx, in each of which is one erect ovule; *style* one; *stigma* acute, or capitellate, with as many tubercles or lobes as there are cells; *fruit* drupaceous, or baccate indehiscent, with several one-seeded cells, or by abortion with only one; *seeds* nut-like, sometimes cohering into a several-celled putamen; *testa* bony, shining, its inner face opaque and softer than the rest; *embryo* erect, large, white, usually enclosed in a fleshy albumen; *cotyledons* when the albumen is present, foliaceous; when absent, fleshy, and sometimes connate; *radicle* short, straight, or a little curved, turned towards the hilum; *plumule* inconspicuous. *Trees* or *shrubs*, abounding in milky juice, with alternate, exstipulate, entire, coriaceous *leaves*, and an axillary inflorescence.

Bassia. (De Cand. viii. 197.)

Bassia butyracea. (Roxb.) *Frelwa*, or *Phulwara*, *Mahva*, or *Madhuca tree*, *Butter-nut tree*. East Indies.

Bassia latifolia. (Roxb.) *Madhuca*, or *Mahwah*. East Indies. Seeds yield a large quantity of oil, but they do not appear to be employed medicinally. (G. and L.) The petals contain sugar, and are much used for the manufacture of a very intoxicating spirit. (O'Sh.)

Bassia longifolia. (Linn.) *Illipe*, or *Illupie tree*. East Indies. The fruit, when pressed, yields a large quantity of oil, used in India for lamps, soapmaking, and also for food; it is also employed medicinally to cure the itch, and other cutaneous disorders; the leaves boiled in water, as well as the milk of the green fruit and bark, are used in rheumatic affections. (L.) The *Shea*, or *Butter tree* of Mungo Park, is a species of this genus; Burnett says that much of the palm oil of commerce is yielded by species of Bassia, or other sapotaceæ. (L.) The Fulwa butter is a soft solid at 95°. (O'Sh.)

Bassia Parkii. *Micadenia*. Hindoostan.

Shea butter or *galam butter* is obtained from the fruit of this tree. It closely resembles the *Bassia latifolia*, and other species indigenous to Hindoostan. According to Park, the tree is abundant at Bambara; the oil is solid, of a greyish-white colour, and freezes at 97°.

Chrysophyllum. (De Cand. viii. 156.)

Chrysophyllum Buranheim. (Reidel.) Brazil.

Bark, *Monesia bark*, astringent and bitter. The astringent extract called *Monesia* is made from the bark of this tree.

CHRYSOPHYLLUM CAINITO. (Linn.) *Star apple.* Tropical America.
Juice of the unripe fruit, with orange juice, very astringent; its var. β, C. Jamaicense, has esculent fruit.

CHRYSOPHYLLUM MACOUCOU. (Aubl.) French Guyana.

CHRYSOPHYLLUM MICROCARPUM. (Swz.) Hispaniola.

CHRYSOPHYLLUM OLIVIFORME. (Lamb.) *C. ferrugineum.* (Gaertn.) Jamaica and Hispaniola.
Fruits esculent.

ISONANDRA. (De Cand. viii. 187.)

ISONANDRA GUTTA. (Hooker.) *The gutta-percha tree.* Malayan Archipelago.
The milky juice of this tree becomes concrete by exposure to the air, and forms the substance called *gutta percha.* The tree grows to a large size, and yields from twenty to thirty pounds of the gutta percha.

LUCUMA. (De Cand. viii. 165.)

LUCUMA CAIMITO. (D. C.) *Achras caimito.* (Ruiz et Pav.) Brazil.
Tree milky, fruit eatable.

LUCUMA MAMMOSA. (Gaertn.) *Achras lucuma, A. mammosa.* (Linn.) *Sapodilla tree.*
Seeds resemble chestnuts; kernel bitter, makes a strengthening emulsion. (G.) Said by Burnett to have an emetic milk. (L.)

MIMUSOPS. (De Cand. viii. 201.)

MIMUSOPS ELENGI. (Linn.) East Indies.
MIMUSOPS MANILKARA. (Don.) *Metrosideros Macassariensis.* (Rumph.) China, Philippine Islands.
Pulp of the fruit eatable. The flowers are powerfully aromatic, and a fragrant water is distilled from them. The seeds yield abundance of oil in much repute among painters. The leaves are said to produce an extraordinary noise when burnt.

SAPOTA. (De Cand. viii. 173.)

SAPOTA ACHRAS. (Mill.) *Achras sapota.* (Linn.) *Necseberry,* or *Naseberry. Sapodilla nispam.* West Indies.
Diuretic, bark used for the Peruvian bark. (G.) Bark, a powerful astringent, used with success as a substitute for cinchona. The seeds, stripped of their skins, are considered by the people of Martinique powerfully diuretic; six seeds pounded in a mortar with a spoonful of wine or water, form a draught which is given daily, at a single dose, in dysury, strangury, and similar disorders. If the dose is much increased, severe pains, and even danger, are brought on. *(Jacquin.)* Fruit eatable when it begins to blett, in that state considered by many as superior to pine apple. The barks of four species of *Achras* have been substituted for those of *Cinchona,* on account of their bitter and febrifugal properties. (L.)
To this order is supposed to belong the famous *Palo de vaca,* or *Cow tree* of South America, the trees of which are regularly milked by the inhabitants of the districts in which they grow. (Loudon.)

Yields *cow-tree milk.* (G.) There seems no reason now to doubt that the *Cow* tree does not belong to this order, but to that of *Urticeæ*, or *Artocarpeæ.* (L.) See *Brosimum.*

SYNSEPALUM. (De Cand. viii. 183.)

SYNSEPALUM DULCIFICUM. (De Cand.) *Bumelia dulcifica.* (Thonning.) *Sideroxylon dulcificum. Miraculous berry of Western Africa. Assarvah, Tahmé.* Africa.

The fruit is an oblong or oval berry, about two-thirds the size of an olive, and somewhat resembling one; it possesses the singular property of causing all acid substances or liquids, as tartaric, citric, or acetic acids, and all unripe fruits, to have an intensely sweet taste to the palate. The duration of these effects seems to depend on the quantity of the fruit used, and its degree of ripeness; when over ripe the property is much deteriorated.

ORDER 93.—EBENACEÆ. (De Cand. viii. 100.)

Flowers polygamous, or deciduous, seldom hermaphrodite; *calyx* gamosepalous, 3—7 lobed, lobes varying in æstivation, persistent; *stamens* definite, either arising from the corolla, or hypogynous, twice as many as the segments of the corolla, sometimes four times as many, or the same number, and then alternate with them; *filaments* simple, in the hermaphrodite species generally doubled, in the polygamous and deciduous ones both their divisions bearing anthers, but the inner one generally smaller; *anthers* attached by their base, lanceolate, two-celled, dehiscing lengthwise, sometimes bearded; *pollen* round, smooth; *ovary* free, 3—12 celled, each cell having one or two ovules pendulous from its apex; *styles* divided, seldom simple; *stigmas* bifid or simple; *fruit* fleshy, round, or oval, by abortion often five-seeded, its pericarp sometimes opening in a regular manner; *seed* with a membraneous testa of the same figure as the albumen, which is cartilaginous and white; *embryo* in the axis, or but little out of it, straight, white, generally more than half as long as the albumen; *cotyledons* foliaceous, somewhat veiny, lying close together, occasionally slightly separate; *radicle* tapering, of middling length, or long, turned towards the hilum; *plumule* inconspicuous. *Trees* or *shrubs,* without milk and with a heavy wood; *leaves,* alternate, exstipulate, entire, coriaceous; *inflorescence* axillary.

DIOSPYROS. (De Cand. viii. 222.)

DIOSPYROS CHLOROXYLON. (Roxb.) East Indies.

Berries esculent.

DIOSPYROS EMBRYOPTERIS. (Pers.) *Embryopteris glutinifera.* (Roxb.) *E. peregrina.* (Gaertn.) East Indies.

Fruit used as glue; yields *gaub;* seeds yield oil. (G.) Used in medicine as a valuable astringent and styptic, and is employed in Bengal for paving the bottoms of boats. The bark has been given, with doubtful results, in the treatment of intermittent fevers. (O'Sh.)

DIOSPYROS KAKI. (Linn.) *Ki, Kaki. Si seu Kaki.* (Kœmpf.) *Diospyros Chinensis.* (Blum.) *D. Schi-Tse Bung.* China, Japan.

Fruit esculent.

DIOSPYROS MELANOXYLON. (Roxb.) *Ebony tree.* East Indies.

The ebony tree is valuable, not only on account of its wood, but for the sake of its bark, which is astringent, and, mixed with pepper, is given for the dysentery by the native doctors of India. (L.)

DIOSPYROS SAPOTA. (Roxb.) *Var. β Nigra.* Philippine Islands.
Berries esculent.

DIOSPYROS VIRGINIANA. (Linn.) *D. concolor.* (Mönch.) *Persimmon, Pishamin.* United States.
Berries eatable when rotten ripe; bark, *Diospyros*, febrifuge, *P. U. S.* (G.) Bark said to be a powerful astringent and febrifuge. (L.)

ORDER 94.—STYRACACEÆ. (De Cand. viii. 244.)

Calyx inferior, or superior, five, rarely four lobed, persistent; *corolla* monopetalous, regular, with imbricated æstivation; *stamens* definite, or indefinite, arising from the tube of the corolla, of unequal length, cohering in various ways, but generally only slightly; *anthers* innate, two-celled, dehiscing inwardly; *ovary* inferior, 3—5 celled; *ovules* definite, the upper ascending, the lower pendulous, or *vice versâ*; *style* simple; *stigma* somewhat capitate; *fruit* drupaceous, containing from one to four bony nuts; *seeds* ascending, or suspended, solitary, with the embryo lying in the midst of the albumen; *radicle* long, directed towards the hilum; *cotyledons* flat, foliaceous. *Trees* or *shrubs*, with alternate, exstipulate *leaves*, usually toothed, turning yellow in drying, and axillary flowers; *hairs* often stellate.

STYRAX. (De Cand. viii. 259.)

STYRAX BENZOIN. (Dryand.) *Benzoin laurel.* East Indies.
Yields by incision benzoin. (G.) The resinous acrid substance called benzoin is a secretion from the bark; it is a local irritant, its vapour causing violent coughing; it acts as a stimulant, more particularly, as is supposed, to the lungs; it has been used in some uterine complaints, as chlorosis.

STYRAX OFFICINALE. (Linn.) *Cane storax tree.* The Levant, Syria, Palestine.
Yields by incision storax. (G.) *Storax*, a fragrant resinous balsamic substance, is obtained in Asia Minor from the branches, by incision; it is brownish-red, friable, but soft and unctuous, and is considered a stimulating expectorant, being supposed to influence the mucous membranes of the air-passages; it is chiefly used in affections of the organs of respiration; the tree does not form the secretion in this country. (L.)

SYMPLOCOS. (De Cand. viii. 246.)

SYMPLOCOS ALSTONIA. (L'Her.) *Alstonia theæformis.* (Linn.) South America.
Leaves astringent, used as tea.

SYMPLOCOS TINCTORIA. (L'Her.) *Hopea tinctoria.* (Linn.) North America.
Leaves used to dye yellow.

ORDER 95.—OLEACEÆ. (De Cand. viii. 102.)

Flowers hermaphrodite, sometimes diœcious; *calyx* monophyllous, divided, persistent, inferior; *corolla* monopetalous, four-cleft, often tubular and irregular, occasionally of four petals, connected in pairs by the intervention of the filaments, sometimes apetalous; æstivation somewhat valvate; *stamens* two, alternate with the segments of the corolla, or with the petals; *anthers* two-celled, dehiscing longitudinally; *ovary* simple, two-celled,

the cells two-seeded, the ovules pendulous and collateral; *style* one or none; *stigma* two-lobed or entire; *fruit* a drupe or berry, or alone or two-celled capsule, often by abortion one-seeded; *seeds* with a dense fleshy albumen; *embryo* about half its length, straight; *cotyledons* foliaceous; *radicle* superior; *plumule* inconspicuous. *Trees* or *shrubs*, with opposite, simple, sometimes pinnated *leaves*; *flowers* in terminal, or axillary racemes, or panicles, the pedicles opposite, with single bracts.

LIGUSTRUM. (De Cand. viii. 293.)

*LIGUSTRUM VULGARE. (Linn.) (E. B. 746) *Ligustrum, Common privet.*

Fl. white. June, July. Large shrub. Hedges and thickets.

Leaves bitter and slightly astringent; flowers astringent and temperant, used in washes and gargles for ulcers; berries have a dry spongy pulp, from which a rose-coloured paint may be obtained. (G.) Used for colouring wines. (O'Sh.)

OLEA. (De Cand. viii. 283.)

OLEA EUROPÆA. (Linn.) *Olea, O. sativa, Olivetree.* South of Europe.

Unripe fruit preserved in brine, oily, astringent; ripe fruit yields oil; leaves astringent; bark substituted for the Peruvian bark. (G.) From the pericarp is obtained, by pressure, the well-known substance called *olive oil*, the medical properties of which are demulcent, emollient, and laxative. The bark is bitter and astringent, and has a great reputation as a substitute for cinchona, according to De Candolle; it also yields a gum, or rather a gum-like substance, once in repute as a vulnerary; this has been found by Messrs. Poole and Pelletier to contain a peculiar substance, which those chemists have named *olivile*. (L.)

FRAXINUS. (De Cand. viii. 274.)

*FRAXINUS EXCELSIOR. (Linn.) (E. B. 1692.) *F. apetala.* (Lamb.) *F. Ornus.* (Scop.) *Common ash.*

Fl. greenish, with black scales. April, May. Large tree. Woods and hedges.

Bark febrifuge and diuretic; seeds acrid, bitter; leaves ʒ ij. to ℥ jss., in infusion a good purge, and a decoction of the same has been used to cure agues; exudes a small quantity of manna from the leaves in hot weather. (G.) Not only yields manna in the warm climate of the south of Europe, but is reported to have a tonic febrifugal bark, and leaves almost as cathartic as those of senna, producing an unequivocal action upon the kidneys. (L.)

FRAXINUS ORNUS. (Linn.) *Ornus Europæa.* (Pers.) *Flowering ash.* South Europe.

From the branches there exudes a bitter sweet substance, called manna in the shops, well known as a gentle laxative. (L.)

FRAXINUS PARVIFOLIA. (Lamb.) *F. lentiscifolia.* (Desf.) *F. tamariscifolia.* (Vahl.) *F. halepensis.* (Herm.) Asia Minor.

FRAXINUS ROTUNDIFOLIA. (Lamb.) *Ornus rotundifolia.* (Pers.) Calabria and the Levant.

Exude manna. The manna yielded by the latter of these is, according to Tenore, of better quality than that obtained from F. ornus. In Calabria and Sicily, in the hottest parts of the summer months, the

manna oozes out of the leaves, and from the bark of the trunk and larger branches of the Fraxinus, or Calabrian ash. The Ornus likewise affords it, but from the trunk and larger branches only, and that chiefly from artificial apertures, whereas it flows from the Fraxinus through every little cranny, and bursts through the large pores spontaneously. The different qualities of manna are from different parts of the tree. (Fothergill.) (L.)

PHILLYREA. (De Cand. viii. 292.)

PHILLYREA MEDIA. (Linn.) *Phillyrea, Mock privet.* South Europe.

Leaves astringent, cleansing ulcers of the mouth.

SYRINGA. (De Cand. viii. 282.)

**SYRINGA VULGARIS. (Linn.) (Bot. Mag. 183.) *Lilac vulgaris.* (Lamb.) *Common lilac.*

Fl. lilac or white. June. Large shrub. Native of Persia.

This plant has some reputation as a cure for intermittent fevers. The unripe fruit is singularly bitter, without any acrimony; and, according to Curveiller, an extract of it is a remarkably good tonic and febrifuge. (L.)

ORDER 96.—JASMINEÆ. (De Cand. viii. 300.)

Flowers hermaphrodite, rarely polygamous, regular; *calyx* persistent, toothed or lobed; lobes 5—8; *corolla* gamopetalous, regular, 4—5—8 lobed, or partite, hypocrateriform lobes imbricated in æstivation; *stamens* two, inserted into the corolla; *filaments* short; *anthers* two-celled, longitudinally dehiscent, turned inwards; *ovary* destitute of a hypogynous disk, two-celled, with one-seeded cells, the ovules in which are erect; *style* simple; *stigma* two-lobed; *fruit* either dry, dehiscent, or indehiscent, and 1—2 celled, 1—2 seeded, or fleshy and 1—2 celled; *seeds* covered with a membranaceous integument; *albumen* white, fleshy, or horny, sometimes very thin; *radicle* cylindrical, turned towards the hilum. *Shrubs*, having usually twining stems; *leaves* opposite or alternate, mostly compound, ternate or pinnate, with an odd one, sometimes simple, the petiole almost always having an articulation; *flowers* opposite in corymbs.

JASMINUM. (De Cand. viii. 301.)

JASMINUM GRANDIFLORUM. (Linn.) Abyssinia.

Yields an essential oil.

**JASMINUM OFFICINALE. (Linn.) *J. viminale.* (Salisb.) *J. vulgavius.* (Lamb.) *Jasminum, White jasmine*, or *Jessamine.*

Fl. white. July. Climbing shrub. Native of India.

Flowers recommended in shortness of breath, and scirrhus of the womb. A perfumed oil is prepared from this and the fixed oil of the Moringa. (O'Sh.)

JASMINUM SAMBAC. (Ait.) *Mogorium Sambac.* (Lamb.) *Jasminum fragrans.* (Salisb.) *Nyctanthes Sambac.* (Linn.) East Indies.

Yields an essential oil.

NYCTANTHES. (De Cand. viii. 314.)

NYCTANTHES ARBORTRISTIS. (Linn.) Tropical Asia.

This plant yields *Hursinghar Flowers;* used as a yellow dye. From Kotah, in the States of Rajpootana, and from Cuttack.

Order 97.—APOCYNACEÆ. (De Cand. viii. 317.)

Calyx gamosepalous, five-divided, persistent; *corolla* gamopetalous, hypogynous, five-lobed, regular, imbricate, or very rarely valvate in æstivation, deciduous; *stamens* five, inserted into the base of the corolla, and alternate with its segments; *filaments* connate or distinct; *anthers* two-celled, dehiscing longitudinally; *ovaries* two, or 1—2 celled, polyspermous; *styles* two or one; *stigma* one, capitate; *fruit* a follicle, capsule or drupe, or berry, double or single; *seed* inserted along the margin of the follicle, with fleshy or cartilaginous albumen; *testa* simple; *embryo* foliaceous; *radicle* superior, turned towards the hilum. *Trees* or *shrubs*, usually milky, with opposite entire *leaves*, and an inflorescence tending to corymbose.

Allamanda. (De Cand. viii. 318.)

Allamanda cathartica. (Linn.) *A. Linnœi.* (Pohl.) *Echites salicifolia.* (Willd.) *A. grandiflora.* (Lamb.) *Orelia grandiflora* (Aubl.) Cayenne, Brazil.

An infusion of the leaves is considered a valuable cathartic medicine in moderate doses, especially in the cure of painter's colic; in over doses it is violently emetic and purgative. (L.)

Alstonia. (De Cand. viii. 408.)

Alstonia scholaris. (R. Br.) India.

This is a large tree, which is named *scholaris*, from the circumstance of its wood having been used in the form of small planks, for children to trace their letters on, a purpose for which it is well adapted, on account of its white, fine-grained wood. The bark has been used by a Mr. Gibson, of Bombay, in diarrhœa and bowel complaints, with success; and by a Mr. Gray, of Newhaven, in a case of British cholera. It is a drug well known to the foreign practitioners in India.

Alyxia. (De Cand. viii. 345.)

Alyxia stellata. (Rœm.) *A. aromatica.* (Rienw.) *Gynopogon stellata.* (Labill.) Malay Archipelago, South Sea Islands.

Bark aromatic, with similar effects to those of Canella alba, and Drymis Winteri, for which it may be substituted; lately introduced into German practice, as a remedy for chronic diarrhœa and nervous complaints; the bark has the odour of melilot, and traces of benzoic acid have been found in it. (L.)

Apocynum. (De Cand. viii. 439.)

Apocynum androsæmifolium. (Linn.) *American dog's bane.* United States.

Root, *Apocynum*, *P. U. S.*, emetic. (G.) Root with an unpleasant, intensely bitter taste; acts as an emetic when recent; in small doses is a useful tonic. (L.) The recent powder in doses of gr. xxx. emetic; in doses of from gr. x. to gr. xx. tonic. (Wood and Bache.)

Apocynum Cannabinum. (Linn.) North America.

Is also emetic, and in decoction diuretic and diaphoretic. (L.) From gr. xv. to gr. xxx. of the powdered root emetic and purgative. Beneficial in dropsy. Called *Indian hemp.* (Wood and Bache.)

Apocynum indicum.

Young shoots eatable.

APOCYNUM VENETUM. (Linn.) *A. Sibiricum.* (Pall.) *Venetian dog's bane.* North of China.

Leaves, mixed up with grease, used to poison animals.

CAMERARIA. (De Cand. viii. 388.)

CAMERARIA LATIFOLIA. (Jacq.) *Bastard manchineel tree.* West Indies.

It is probable that this plant, which is very abundant in Cuba, might prove a valuable source of caoutchouc, as the milk gushes out of the smallest wound, and readily thickens; it is said to be so poisonous, as to be used by the West Indian natives to envenom their arrows. (L.)

CARISSA. (De Cand. viii. 331.)

CARISSA CARANDAS. (Linn.) *Echites spinosa.* (Burm.) *Capparis Carandas.* (Gmel.) India.

The acid fruit affords the well-known and favourite *Caranda jelly* of our tables. (O'Sh.)

CERBERA. (De Cand. viii. 352.)

CERBERA MANGHAS. (Linn.) East Indies.

Bark purgative. (G.) The kernels are emetic and poisonous; the milky sap is employed as a purgative; according to Waitz, the leaves and bark are so similar to senna in their action, that they are substituted for it in Java. (L.)

ECHITES. (De Cand. viii. 446.)

ECHITES SYPHILITICA. (Linn.) Surinam.

Used in syphilis. (G.) A decoction of the herb antisyphilitic. (D. C.)

HASSELTIA. (Lindl. Med. Bot. 536.)

HASSELTIA ARBOREA. (Blume.) Java.

In Java, the milk obtained from the trunk by incision, mixed with honey, and reduced with boiling water, is employed as a powerful drastic for destroying the tape-worm; it is, however, apt to produce inflammation of the intestines, and is even in some cases fatal. (L.)

HOLARRHENA. (De Cand. viii. 413.)

HOLARRHENA ANTIDYSENTERICA. (Wall.) *Chonemorpha antidysenterica.* (Don.) *Echites antidysenterica.* East Indies.

Bark, *Tellichery bark*, *Conessi bark*, *Codaga pala*, bitter, used in dysentery; seeds vermifuge and antispasmodic, used in cholera. (G.)

HOLARRHENA PUBESCENS. (Wall.) India.

Qualities the same as the preceding species. (O'Sh.)

ICHNOCARPUS. (De Cand. viii. 434.)

ICHNOCARPUS FRUTESCENS. (Brown.) *Apocynum frutescens.* (Linn.) *Echites frutescens.* (Roxb.) Ceylon.

Sometimes used in India as a substitute for sarsaparilla, according to Professor Royle; also mentioned as a medical plant by Afzelius in his Remedia Guineensia.

NERIUM. (De Cand. viii. 419.)

NERIUM ODORUM. (Soland.) *N. odorantum*, *N. oleander.* (Lour.) *N. grandiflorum.* (Desf.) India, China.

The bark of the root and the sweet-smelling leaves are considered by the native Indian doctors as powerful repellents, applied externally; the root taken internally acts as a poison. (L.)

NERIUM OLEANDER. (Linn.) *N. lauriforme.* (Lamb.) *Rose bay, South Sea rose.* South of Europe.

Internally poisonous, externally astringent, antipsoric, and sternutatory; wood used to clear muddy water; leaves acrid, appear to contain free gallic acid, poisonous, infused in oil used in itch. (G.) Very acrid; a decoction of its leaves or bark forms an acrid stimulating wash, much employed by poor people in the south of France to cure the itch, and to destroy cutaneous vermin; the peasants in the neighbourhood of Nice use the powdered bark and wood to poison rats. (L.)

NERIUM TINCTORIA. *Wrightea tinctoria.* East Indies.

A plant flourishing in dry and barren lands, from which *Pata*, or *Palar indigo*, is prepared in some parts of India. It is said that this indigo is occasionally mixed with that of commerce.

OPHIOXYLON. (De Cand. viii. 342.)

OPHIOXYLON SERPENTINUM. (Willd.) East Indies.

Root, *Radix mustela*, purgative, bitter, tonic, febrifuge, used in the bites of serpents. (G.) Root employed by the Telinga physicians of India as a febrifuge and alexipharmic, and also to promote delivery in tedious cases. (L.)

PLUMIERIA. (De Cand. viii. 389.)

PLUMIERIA ACUTIFOLIA. (Poir.) *P. acuminata*, *P. obtusa.* (Lour.) Malay Archipelago.

Root used as a cathartic in Java. (L.)

PLUMIERIA DRASTICA. (Mart.) Brazil.

Said to be a powerful purgative.

PLUMIERIA RUBRA. (Linn.) Jamaica and Surinam.

Milk excessively corrosive.

STRYCHNOS. (L. Med. Bod. 528.)

STRYCHNOS COLUBRINA. (Linn.) *Modira caniram.* (Rheede.) Malabar.

Wood, *Snakewood*, *Lignum colubrinum*, occasions tremblings, is emetic, vermifuge, very bitter, and serviceable in stubborn intermittents and chronic diarrhœa. (G.) This is the most esteemed of all the Ligna colubrina by the natives of India, and fetches so high a price among them, as rarely to find its way into Europe; it is the true *Pao de cobra* of the Portuguese; the wood of the root is considered an infallible remedy for the bite of the Naga, or Cobra de Capella, as well as for that of every other venomous snake; it is applied externally, and at the same time given internally; it is also used in substance for the cure of intermittent fevers. Blume considers that several different kinds of Strychnos are brought into the market under the name of Lignum colubrinum, to represent this, especially that of S. nux vomica, and probably of S. minor. (L.)

STRYCHNOS IGNATIA. (Berg.) *Ignatia amara.* (Linn.) *Ignatiana philippinica.* (Lour.) *St. Ignatius' bean.* The Philippines.

Seed, *Faba sancti Ignatii*, has the form of a nut, excessively bitter; occasions giddiness, convulsions, and vomiting, but has been used in small doses to cure agues. (G.) Used successfully in India as a remedy for cholera, under the name of *Papeeta;* but giddiness and convulsions are known to follow its exhibition, if given in an over dose. (L.) Deemed also an efficacious vermifuge. (O'Sh.)

STRYCHNOS LIGUSTRINA. (Blume.) *S. colubrina* of some authors. *Caju-Ular*, and *Caju-Nassi.* Malayan Archipelago.

This yields the real ancient *Lignum colubrinum* of Timor, once held in the highest estimation as a remedy for paralysis of the lower extremities, and old cachectic disorders, but now omitted from modern practice. M. Waitz, a Dutch practitioner in Java, is stated by Blume to report most favourably of its effects as an anthelmintic, in cases of paralysis of the lower extremities, and in blennorrhœa faucium et laryngis, diseases to which Europeans are very subject in Java. (L.)

STRYCHNOS NUX VOMICA. (Linn.) East Indies.

Ripe pulp eatable in small quantity; seeds *nux vomica*, hairy, require rasping or roasting, very bitter, emetic and poisonous to many animals; they act as an excitant upon the nervous system, producing tetanus; used in paralysis with some success, and in chronic diarrhœa and chronic dysentery; said to render persons insensible to the venom of serpents; the active principles of it are *strychnia* and *brucea*; its action appears to be directed towards the spinal cord, and to have no influence on the brain; it is found useful in paralytic affections of the voluntary muscles. (G.) The seeds are extremely poisonous, in large doses producing extraordinary rigidity and convulsive contractions of the muscles previous to death; in very small and repeated doses it promotes the appetite, assists the digestive process, increases the secretion of urine, and sometimes acts slightly on the bowels; it is employed medicinally in paralysis, dyspepsia, dysentery, affections of the nervous system, &c., and appears to be very active in removing impotence; it appears, however, that virility is preserved no longer than the use of the drug is persevered in; see Pereira, Med. Gaz. xix. 440. The bark of this plant has been sold in Europe as a sort of angostura bark, and obtained the name of *False angostura;* it was at one time assigned to Brucea antidysenterica, but Guibourt suspected it to be produced by some plant allied to Strychnos. M. Batka, of Prague, referred it to S. nux vomica, and Dr. Christison has found it identical with bark of Strychnos nux vomica, obtained from India for comparison: Blume is of opinion that a great part of the Lignum colubrinum of commerce consists of the thick roots and wood of the middle-sized branches of this species more than of any other; the poisonous principle in this, and other plants of the genus, is the Strychina of chemists. (L.)

STRYCHNOS POTATORUM. (Linn.) *Titan cotte, Clearing nut.* India.

Wood and seeds very bitter, used to render muddy water clear; flowers aromatic; ripe fruit emetic; young fruit preserved used as a sweetmeat. (G.) The ripe seeds are dried and sold in every market,

to clear muddy water; the natives never drink clear well-water, if they can get pond or river water, which is always more or less impure according to circumstances; one of the seeds is well rubbed for a minute or two round the inside of the vessel, generally an unglazed earthen one, containing the water, which is then left to settle; in a very short time the impurities fall to the bottom, leaving the water clear and perfectly wholesome. These seeds are constantly carried by the more provident part of our officers and soldiers in time of war, to enable them to purify their water. The natives of India eat the pulp of the fruit when ripe; Dr. Roxburgh found it disagreeable. (L. ex Roxb.) Ainslie informs us that the ripe fruit is deemed emetic by the natives of southern India when given in powder to the quantity of about half a tea-spoonful. (O'Sh.)

STRYCHNOS PSEUDO QUINA. (St. Hil.) *Geniostoma febrifugum.* (Spreng.) *Quina do Campo.* Brazil.

Considered by Aug. de St. Hilaire to be the best febrifuge in Brazil. With the exception of the fruit, which is eaten by children without danger, all the parts, especially the bark, are extremely bitter, and rather astringent; it is universally employed instead of cinchona, and is asserted to be fully equal to Peruvian bark in the cure of the intermittents of Brazil. Vauquelin analyzed the bark, and could find in it neither brucine, strychnine, or quinine. (L.)

STRYCHNOS TIEUTE. (Lesch.) *Tshettek*, or *Tjettek.* Java.

From the bark of the root there is prepared, in Java, one of the most dangerous of known poisons, acting like nux vomica, only in a more intense and violent manner; it is called *Tjettek* and *Upas Raga.* (L.)

STRYCHNOS TOXIFERA. (Schomb.) Guayana.

This plant has been ascertained by Mr. Schomburgh to furnish the basis of a celebrated poison called *Wooraly*, *Woorari*, *Ourari*, or *Urari*, in Guayana; according to Dr. Hancock, the bark applied externally is a good remedy for foul ulcers; in his opinion it is one of the most potent sedatives in nature, and could it be safely managed, would no doubt become a valuable remedy in the treatment of convulsive and spasmodic disorders. *Med. Gaz.* xx. 281.

TANGHINIA. (De Cand. viii. 355.)

TANGHINIA VENENIFERA. (Poir.) *Cerbera tanghin.* (Hook.) *C. venenifera.* (Stend.)

The kernel of the fruit is a deadly poison; although not longer than an almond, it is sufficient to destroy twenty people. It was used in Madagascar as an ordeal, but the practice is now discontinued. There is some doubt, however, whether this plant may not be the same as Cerbera manghas. (L.)

TABERNÆMONTANA. (De Cand. viii. 361.)

TABERNÆMONTANA ARCUATA. (Ruiz et Pav.) Peru.

Stem lactescent, exudes resin.

THEVETIA. (De Cand. viii. 343.)

THEVETIA AHOUAI. (D. C.) *Cerbera ahouai.* (Linn.) Brazil.

Seeds, *nux ahouai*, violently emetic. (G.) The seeds are very poisonous; bark and sap are emetic and narcotic. (L.)

THEVETIA NERIIFOLIA. (Juss.) *Cerbera thevetia.* (Linn.) *Cerbera Peruviana.* (Pers.) West Indies.

Has a dangerous venomous milk; the bark is bitter and cathartic, and is reported to be a powerful febrifuge, two grains only being affirmed to be equal to an ordinary dose of cinchona. (L.)

URCEOLA. (De Cand. viii. 358.)

URCEOLA ELASTICA. (Roxb.) Sumatra and Pulopenang.

Yields elastic gum. (G.) This plant yields a very fine kind of caoutchouc, firm, very elastic, scentless and possessing all the qualities of the best samples of that substance. (L.)

VAHEA. (De Cand. viii. 327.)

VAHEA GUMMIFERA. (Lamb.) *Tabernæmontana squamosa.* (Spreng.) Madagascar.

Yields caoutchouc.

VINCA. (De Cand. viii. 381.)

*VINCA MAJOR. (Linn.) (E. B. 514.) *Greater periwinkle.*

Fl. bluish purple. May. Perennial. Woods and thickets.

*VINCA MINOR. (Linn.) (E. B. 917.) *Vinca pervinca, Lesser periwinkle.*

Fl. blue or white. May, June. Perennial. Hedges and banks in woods.

Leaves astringent, used in tanning, antidysenteric, contracting and strengthening the sexual organs; in hot climates the plants of this genus acquire poisonous qualities. (G.)

VINCA PUSILLA. (Murr.) *V. parviflora.* (Retz.) *Catharanthus pusillus.* (Don.) East Indies.

Applied in India as an external stimulant in cases of lumbago. (L. ex Roq.)

WILLUGHBEIA. (De Cand. viii. 321.)

WILLUGHBEIA EDULIS. (Roxb.) East Indies.

Every part of the plant, on being wounded, discharges copiously a very pure white viscid juice, which is soon, by exposure to the air, changed into an indifferent kind of caoutchouc. The fruit is eaten by the natives of the places where it grows, and is by them reckoned good. (L.)

WRIGHTIA. (De Cand. viii. 404.)

WRIGHTIA ANTIDYSENTERICA. (Br.) *Nereum antidysentericum.* (Linn.) *Echites antidysenterica.* (Roxb.) East Indies.

This bark is called *Conessi* in commerce, and has been introduced into European practice on account of its astringent febrifuge qualities. (L.) For conessi bark, see also Holarrhena. The seeds are intensely bitter, and used as a vermifuge; conessi bark has been given with much alleged advantage in chronic dysentery; the infusion seems the best form; dose 1 oz. thrice daily. (O'Sh.)

Order 98.—ASCLEPIADEÆ. (De Cand. v. 49).

Calyx five-cleft, persistent; *corolla* monopetalous, hypogynous, five-lobed, regular, with imbricated, very seldom valvular æstivation, deciduous; *stamens* five, inserted into the base of the corolla, alternate with the segments of the limb; filaments usually connate; *anthers* two-celled, sometimes almost four-celled, in consequence of their dissepiments being nearly complete; *ovaries* two; *styles* two, often very short: *stigma* common to both; *styles* dilated, five-cornered, with corpusculiferous angles; *follicles* two, one of which is sometimes abortive; *placenta* attached to the suture, finally separating; *seeds* numerous, imbricated, pendulous, almost always comose at the hilum; *albumen* thin; *embryo* straight; *cotyledons* foliaceous; *radicle* superior; *plumule* inconspicuous. *Shrubs*, or occasionally *herbaceous plants*, almost always milky, and often twining; *leaves* entire, opposite, sometimes alternate, or whorled, having cilia between their petioles in lieu of stipules; *flowers* somewhat umbelled, fascicled, or ramose, proceeding from between the petioles. (Lindl. ex R. Brown.)

Asclepas. (De Cand. viii. 564,)

Asclepias Cornuti. (D. C.) *Apocynum Syriacum*, *Asclepias Syriaco.* (Linn.) *Common silk weed.* North America.

Milk of the plant a drastic poison; leaves resolvent; root emetic.

Asclepias curassavica. (Willd.) *Bastard ipecacuanha*, *Red-head.* West Indies and Tropical America.

Root whitish, mixed with ipecacuanha, less active; expressed juice of the plant emetic, coch. maj. j. to ij., or as a clyster in bleeding piles; bruised leaves applied to fresh wounds. (G.) This plant is called *Wild ipecacuanha* in the West Indies, where it is employed by the negroes as an emetic; the roots, which are the parts used, appear to be also purgative; a decoction is said to be efficacious in gleets and fluor albus. (L.)

Asclepias incarnata. (Linn.) *A. incarnata.* (Michx.) *A. amœna.* (Michx.) *Flesh-coloured asclepias.* North America.

Root diuretic.

Asclepias tuberosa. (Linn.) *A. decumbens.* (Linn.) *A. tuberosa.* (Michx.) *Butterfly weed*, *Pleurisy root.* United States.

Root diuretic, purgative. (G.) Root expectorant and diaphoretic, employed successfully in catarrh, pneumony, and pleurisy. Bigelow says he is persuaded of its usefulness as a mild tonic and stimulant. (L.)

Asclepias decumbens (Linn.) is probably a mere variety of the last, and has similar properties. (L.)

Root, *Butterfly root*, diaphoretic, slightly stimulant, also purgative. (G.)

Calotropis. (De Cand. viii. 535.)

Calotropis gigantea. (Brown.) *Asclepias gigantea.* (Willd.) *Ericu.* India.

Milk inspissated, used in lepra; inner rind of the root, *madar*, *mudar*, in syphilis and tape-worm, gr. v. twice a day. (G.) A plant of great importance in Indian medicine, employed in epilepsy, hysterics, convulsions from coitus immediatety after bathing, spasmodic disorders, such as locked-jaw, convulsions in children, paralytical complaints, cold sweats, poisonous bites, and venereal complaints, (Roxburgh.) Under the names of *mador*, *mudar*, *akum*, and *yercund*, the root and bark, and especially the inspissated juice, are used as powerful altera-

tives and purgatives; it is especially in cases of leprosy, elephantiasis, and intestinal worms, that it has been found important; its activity appears owing to the presence of *mudarine*, a singular substance, possessing the property of coagulating by heat and becoming again fluid by exposure to cold. (L.) Emetic, alterative, diaphoretic and purgative. (O'Sh.)

CALOTROPIS PROCERA. (Brown.) *C. heterophylla.* (Wall.) *Apocynum Syriacum.* (Clus.) *Asclepias procera.* Arabia, Persia.

Juice extremely acrid; Prosper Alpinus says it was administered successfully as a remedy for ringworm and other cutaneous affections; also a powerful depilatory; according to Professor Royle, this, or an allied species, produces a kind of manna called *Shukhr ool askur.* (L.)

CAMPTOCARPUS. (De. Cand. viii. 493.)

CAMPTOCARPUS MAURITIANUS. (D. C.) *Periploca mauritiana.* (Poir.) *Cynanchum mauritianum.* (Lamb.) Isles of France and Bourbon.

Root, *Isle of France ipecacuanha.*

CYNANCHUM. (De Cand. viii. 547.)

CYNANCHUM ACUTUM. (Linn.) Var. *a. C. monspeliacum, European scammony.* Sea-coast of Italy, Spain, &c.

Yields *French scammony.* (G.) The inspissated juice is drastic, and known officially under the name of *Montpelier scammony.* (L.)

CYNANCHUM OVALIFOLIUM. (Wight.) (L. Med. B. 542.) Penang.

Yields an excellent caoutchouc at Penang, according to Dr. Wallich. (L.)

CYNANCHUM VINCETOXICUM. (Brown.) (L. Med. Bot. 542.) *Asclepias vincetoxicum.* (Linn.) *Hirundinaria, Swallow-wort.* Europe.

Root, *German contrayerva*, irritating, forcing out a sweat, alexiterial and antihydropic. (G.) An emetic and purgative, once celebrated as an antidote to poisons, whence its name. (L.)

GYMNEMA. (De Cand. viii. 621.)

GYMNEMA LACTIFERUM. (Brown.) *Asclepias lactifera.* (Linn.) Ceylon.

Milk used as food.

GYMNEMA SYLVESTRE. India.

This plant, when chewed, possesses the singular property of rendering the palate of those persons who use it, insensible to the taste of saccharine substances, at the same time exerting no influence on it as regards other things. Captain Edgeworth could perfectly distinguish the aroma of tea sweetened with sugar, but failed to detect the presence of saccharine matter; this he found to be likewise the case with preserves and other substances containing sugar; and on putting some powdered sugar in his mouth, it seemed like so much sand, being entirely destitute of any saccharine taste. The plant, like most of its order, produces a milky juice, and is a native of the plains of Northern India.

HEMIDESMUS. (De. Cand. viii. 494.)

HEMIDESMUS INDICUS. (R. Brown.) *Periploca Indica.* (Willd.) *Asclepias pseudosarsa.* (Roxb.) India.

Root, *East Indian sarsaparilla*, alterative. (G.) The sarsaparilla of India is chiefly the root of this species; a decoction of it is prescribed by European practitioners in cutaneous diseases, scrofula, and venereal affections. (Ainslie.) It is said to be quite as efficient a medicine as the best sarsaparilla of America, and is probably the drug from which Mr. Garden obtained what he calls *Smilasperic acid;* a great deal of it is consumed in London now, as a very fine kind of sarsaparilla. (L.) It acts as a diuretic, diaphoretic, and tonic, in the most satisfactory manner. (O'Sh.)

HOYA. (De Cand. viii. 634.)

HOYA VIRIDIFLORA. (Brown.) *Apocynum tiliæfolium, Asclepias volubilis.* (Linn.) East Indies.

The root and tender stalks sicken and promote expectoration; the leaves, peeled and dipped in oil, are much esteemed by the natives of India as a discutient in the early stages of boils; when the disease is more advanced they are employed in the same way to promote suppuration. (L. ex Wight.)

OXYSTELMA. (De Cand. viii. 542.)

OXYSTELMA ESCULENTUM. (Brown.) *Asclepias rosea.* (Roxb.) *Periploca esculenta.* (Linn.) East Indies.

Young shoots esculent. (G.) Said by De Candolle to be eatable, but Roxburgh says he did not find that the natives ever ate it, and Dr. Wight makes the same statement, adding, however, that in decoction it is used for a gargle for aphthous affections of the mouth and fauces. (L.) Cattle eat the roots. (O'Sh.)

PERGULARIA. (De Cand. viii. 618.)

PERGULARIA EDULIS. (Thumb.)

Young shoots eatable. (G.) Referred by De Candolle to a doubtful species of Ceropegia.

PERIPLOCA. (De Cand. viii. 497.)

PERIPLOCA GRÆCA. (Linn.) *P. maculata.* (Mönch) *P. altera.* (Dod.) *Scammony senna.* South of Europe.

Leaves mixed with senna, more pointed and longer.

PIARANTHUS. (De Cand. viii. 650.)

PIARANTHUS INCARNATUS. (Don.) *Stapelia incarnata.* (Linn.) Cape of Good Hope.

Herb esculent.

SARCOSTEMMA. (De Cand. viii. 537.)

SARCOSTEMMA APHYLLUM. (Brown.) *Asclepias aphylla.* (Thumb.) Africa.

SARCOSTEMMA STIPITACEUM. (Brown.) *A. stipitacea.* (Forsk.) Arabia.

Young shoots esculent.

SARCOSTEMMA GLAUCUM. (H. B. et Kunth.) *Asclepias cynanchoides.* (Willd.) South America.

Employed in Venezuela as an emetic in room of ipecacuanha. (L.)

SECAMONE. (De Cand. viii. 501.)

SECAMONE ALPINI. (Rœm.) *Periploca secamone.* (Linn.) *Oxystelma ægyptiacum.* (D. C.) Egypt.

Roots yield by incision *Smyrna scammony.* (G.) A drastic, said by some to yield Smyrna scammony, but this is very doubtful. (L.)

SECAMONE EMETICA. (Brown.) *Periploca emetica.* (Retz.) India. Root used for ipecacuanha. (G.) Roots acrid and emetic. (L.)

SOLENOSTEMMA. (De Cand. viii. 533.)

SOLENOSTEMMA ARGEL. (Hayn.) *Cynanchum argel.* Upper Egypt. The leaves and whole plant powerfully purgative, and even drastic; the former have been mixed very largely with Alexandrian senna, but whether intentionally, or through carelessness, has not been clearly shown. The practice of mixing argel leaves with Alexandrian senna, which was at one time so common that it was difficult to find a sample free from them, has been in great measure relinquished.

TYLOPHORA. (De Cand. viii. 606.)

TYLOPHORA ASTHMATICA. (Wight.) *Asclepias asthmatica.* (Roxb.) *Cynancham vomitorium.* (Lamk.) *C. ipecacuanha.* (Willd.) *C. tomentosum.* East Indies.

Root, *Coromandel* and *Ceylon ipecacuanha;* young shoots esculent. (G.) Root acrid, used on the coast of Coromandel as a substitute for ipecacuanha; Dr. Roxburgh found it to answer the same purpose as that drug, and had also very favourable reports of it from others; Dr. J. Anderson, physician general at Madras, confirms this; it was used with great success in a dysentery that was in his time epidemic in the British camp; no doubt it is one of the most valuable medicines in India; in large doses it is emetic, in smaller doses often repeated, it acts as a cathartic; Burnett states it to be valuable as a sudorific, and to be peculiarly beneficial in humoral asthma. (L.)

TYLOPHORA LÆVIGATA. (D. C.) *Cynanchum lævigatum.* (Vahl.) *C. rindera, Mattia lævigata, Rindera lævigata, R. tetrapsis.*

Root, *White Bengal ipecacuanha.*

ORDER 99.—SPIGELIACEÆ. (Lindl. Nat. Syst. 298. Endl. Gen. Pl. 606.)

Calyx inferior, regularly five-parted; *corolla* regular, with five lobes, which have a valvate æstivation; *stamens* five, inserted into the corolla, all in the same line, alternate with its lobes; *pollen* three-cornered, with globular angles; *ovary* superior, two-celled; *style* articulated with it, inserted; *stigma* simple; *fruit* capsular, two-celled, two-valved, the valves turned inwards at the margin, and separating from the central placenta; *seeds* several, small; *testa* simple; *embryo* very minute, lying in a copious fleshy albumen, with the radicle next the hilum. *Herbaceous plants* or *under shrubs; leaves* opposite, entire, with stipules, or a tendency to produce them; *flowers* arranged in one-sided spikes; *pubescence* simple or stellate.

SPIGELIA. (Endl. Gen. Pl. 607.)

SPIGELIA ANTHELMIA. (Linn.) *Anthelminthia quadrifolia.* (Brown.) West Indies.

SPIGELIA MARILANDICA. (Linn.) *Lonicera marilandica.* (Linn.) *Carolina pink root, Worm grass, Worm seed.* North America.

Herbs bitter, used to expel lumbrici from children; dose of the powdered root or herb gr. x. to 3 j. night and morning. (G.) Both root and leaves of S. Marilandica are active anthelmintics; their efficacy is much impaired by keeping; also purgative and narcotic in a slight degree. It appears to be an acrid narcotic, and is apt to produce very unpleasant symptoms after being exhibited: dimness of sight, giddiness, dilated pupil, spasms of the muscles of the eyes, and even convulsions, are reported by Burton to have been brought on by it. (L.)

ORDER 100.—GENTIANEÆ. (De Cand. Bot. Gal. 325.)

Calyx gamosepalous, divided, persistent; *corolla* gamopetalous, regular, often marcescent, limb partite, equal; lobes imbricated in æstivation, equal in number to the segments of the calyx, generally five; *stamens* inserted on the corolla, as many as, and alternate with its segments; *ovary* free; styles one, or rarely two; *stigma* simple, or two-lobed; *capsule* many-seeded, 1—2 celled, bivalved, the valves dehiscent at the apex, with the margin bent inwards, which in the two-celled ones forms a dissepiment; *seeds* inserted on the margin of the valves; *embryo* straight, in the centre of a fleshy albumen; *radicle* generally inferior. Bitter glabrous *herbs*, with opposite, generally sessile leaves.

AGATHODES. (Endl. Gen. Plant, p. 601.) *Agathotes.* (Lindl.)

AGATHODES CHIRAYTA. (Don.) *Gentiana chirayta.* (Flem.) *Chirayit, Chiretta, Creata.* Nepal and north of India.

An excellent tonic bitter; the whole plant is pulled up when the flowers begin to decay, and dried for use; its febrifugal properties are in high estimation with European practitioners in India, who use it instead of cinchona, when the latter is not to be procured. (L.)

CHLORA. (De Cand. Bot. Gal. 325. Endl. Gen. Pl. 603.)

*CHLORA PERFOLIATA. (Linn.) (E.B. 2469.) *Gentiana perfoliata.* (Linn.) *Yellow centaury.*

Fl. yellow. July, September. Annual. Chalky and clayey pastures.

Root bitter, tonic. (G.) Qualities similar to those of gentiana and erythræa, but weaker. (L. ex Smith.)

CICENDIA. (Lindl. Med. Bot. 520. Endl. Gen. Pl. 602.)

CICENDIA HYSSOPIFOLIA. (Wight.) *Exacum hyssopifolia.* (Willd.) *Gentiana H.* (Linn.) East Indies.

The whole plant is somewhat bitter, though much less so than many of its natural allies; employed by the natives of India as a stomachic, in decoction and powder; thus used it is said to act also as a laxative. (L. ex Wight.)

COUTOUBEA. (Endl. Gen. Pl. 604.)

COUTOUBEA RAMOSA. (Aubl.) *Exacum ramosum.* (Vahl.)

COUTOUBEA SPICATA. (Aubl.) *C. alba.* (Lamb.) Guiana.

Febrifuge and stomachic. (G.) The whole plant very bitter: employed successfully in promoting the menstrual discharge, in various stomachic complaints, in visceral obstructions, and as an anthelmintic. (L. ex Aublet.)

ERYTHRÆA. (Endl. Gen. Pl. 602.) CHIRONIA (De Cand. Bot. Gal. 327.)

*ERYTHRÆA CENTAURIUM. (Pers.) (E. B. 417.) *Centaurium minus, Chironia centaurium.* (Willd.) *Gentiana centaurium.* (Linn.) *Lesser centaury.*

Fl. rose-coloured. August. Annual. Dry pastures. Common.

Flowering tops, *Centauria cacumina*, bitter, febrifuge, and vermifuge; used against obstructions, jaundice, weaknesses, hydrophobia; sometimes cathartic; externally in decoction destroys lice and cures the itch; root more powerful than the flowers. (G.) This wild plant possesses all the essential properties of the gentian of the shops, and although not used professionally, is a very valuable native medicine; in the places where it grows, it is carefully collected for use in rustic pharmacy. (L.)

FRAZERA. (Endl. Gen. Pl. 601.)

FRAZERA CAROLINENSIS. (Walt.) *F. Walteri.* (Michx.) *Muretta columbo, American calumba.* United States.

Root, *American columbo, Frasera. P. U. S.*, used as calumba root. (G.) The root is a pure, powerful, and excellent bitter, destitute of aroma, and fully equal to gentian; when fresh, it is reported to be emetic and cathartic: the roots have been imported into Europe as a sort of calumba, and have acquired the name of *American calumba.* (L.)

GENTIANA. (De Cand. Bot. Gal. 326. Endl. Gen. Pl. 600.)

*GENTIANA AMARELLA. (Linn.) (E. B. 236.) *G. pratensis.* (Fral.) *Eurythalia amarella.* (Borkh.) *E. pratensis.* (Don.) *Ericola flava.* (Don.) *Gentianella autumnalis, Autumnal gentian, Bastard gentian, Fell wort.*

Fl. pale dingy purple. April, October. Annual. Subalpine pastures and chalky pastures.

Bitter, used as a tonic. (G.) One of the British substitutes for the gentian of the shops. (L.)

*GENTIANA ACAULIS. (Linn.) (E. B. 1594.) *Gentiana grandiflora.* (Lamb.) *Dwarf gentian.*

Fl. purplish-blue. June, July. Perennial. Doubtful native.

Bitter, used as tonic. (G.)

*GENTIANA CAMPESTRIS. (Linn.) (E. B. 237.) *Eurythalia campestris.* (Borkh.) *Hippion auriculatum.* (Schmidt.) *Field gentian.*

Fl. pale and dull purple. August, October. Annual. Hilly pastures.

A substitute for the officinal gentian. (L.)

GENTIANA CATESBÆI. (Walt.) *Blue gentian.* North America.

Roots bitter, tonic. (G.) Dried root mucilaginous and sweetish, then intensely bitter, approaching nearly to G. lutea. It is considered the best substitute in North America for that species. (L).

GENTIANA KURROO. (Royle.) *Pneumonanthe kurroo.* (Don.) Himalaya mountains.

Root used like gentian in the north of India. (L.)

GENTIANA LUTEA. (Linn.) *Common gentian. Great yellow gentian.* Middle of Europe.

The root of this species furnishes the gentian of the shops; a valuable bitter drug employed extensively in certain forms of dyspepsia, in

intermittents, and as an anthelmintic; in full doses it is apt to relax the bowels, and it does not always agree with the stomach; in fact, it possesses a volatile principle, capable of producing nausea and a kind of intoxication; the root contains a good deal of sugar and mucilage, which enables the Swiss to prepare from it a liqueur held in high esteem among that people. (L.)

GENTIANA PANNONICA. (Scop.) *G. punctata.* (Jacq.) *G. purpurea.* (Vill.) *Pneumonanthe Pannonica.* (Schmidt.) *Calanthe Pannonica.* (Don.) Alps of Europe.

Used as a substitute for G. lutea in the shops of Bavaria and Austria. The roots are extremely bitter, and not inferior to that species. (L.)

*GENTIANA PNEUMONANTHE. (Linn.) (E. B. 28.) *G. linearifolia.* (Lamb.) *Pneumonanthe Vulgaris.* (Schmidt.) *Ciminalis Pneumonanthe.* (Borkh.) *Calathian violet, Marsh gentian.*

Fl. deep blue. August, September. Perennial. Moist heaths.

Bitter, used as a tonic.

GENTIANA PUNCTATA. (Linn.) *G. campanulata.* (Jacq.) *Dasystephana punctata.* (Borkh.) *Cœlanthe punctata.* (Don.) Alps of Europe.

Collected on the Alps of Europe in great quantity, and sold for G. lutea, to which it is not inferior in quality. (L.)

GENTIANA PURPUREA. (Linn.) *Cœlanthe purpurea.* (Borkh.) Alps of Norway, Switzerland, and Savoy.

Employed in continental practice. (L.)

*GENTIANA VERNA. (Linn.) (E. B. 493.) *Gentianella verna, Gentianel, Spring alpine gentian.*

Fl. bright blue. April, May. Perennial. Alpine pastures.

Bitter, used as a tonic.

LISIANTHUS. (Endl. Gen. Pl. 603.)

LISIANTHUS PENDULUS. (Mart.) Brazil.

The Brazilians make use of the root, which is extremely bitter, in decoction as a febrifuge. (L. ex Martius.)

MENYANTHES. (Endl. Gen. Pl. 605. De Cand. Bot. Gal. 325.)

*MENYANTHES TRIFOLIATA. (Linn.) *Trifolium paludosum, Bog bean, Common buckbean, Marsh trefoil.*

Fl. white, tipped externally with red. June, July. Perennial. Hampstead heath.

Bitter, astringent; leaves dried and powdered, ʒj. purge and vomit, used as a vermifuge; an infusion is extremely bitter, and useful in rheumatism and dropsy; substituted for hops in brewing, two oz. being equal to one lb. of hops. (G.) All the plant, especially the root, intensely bitter; reckoned one of the most valuable of tonics; large doses produce vomiting, purging, and frequently powerful diaphoresis; recommended in intermittent and remittent fevers, gout, herpetic complaints, rheumatism, dropsy, scurvy, and worms. (L.)

SABBATIA. (Endl. Gen. Pl. 603.)

SABBATIA ANGULARIS. (Pursh.) *Chironia angularis.* (Linn.) *American centaury, Sabbatia, P. U. S.* United States.

Root extremely bitter, used as a tonic. (G.) One of the most pure and simple bitters; extensively employed in North America in both intermittent and remittent fevers. (L.)

SABBATIA DECUSSATA. North America.

SABBATIA GRACILIS. (Salisb.) *Chironia campanulata.* (Linn.) *Chironia gracilis.* (Michx.) North America.

Have similar properties.

VILLARSIA. (Endl. Gen. Pl. 605. De Cand. Bot. Gal. 325.)

* VILLARSIA NYMPHŒOIDES. (Vent.) (E. B. 217.) *Nymphæa lutea minor, Menyanthes nymphœoides.* (Linn.) *Dwarf water lily. Fringed bog bean, Villarsia.*

Fl. yellow. July, August. Perennial. Deep rivers and pools in the east of England.

Properties the same as Menyanthes trifoliata. (G.) Stems bitter, tonic, and febrifugal. (L.)

ORDER 101.—BIGNONIACEÆ. (R. Brown Prod. 471.)

Calyx gamosepalous; *corolla* hypogynous, generally irregular, 4—5 lobed; *filaments* of the stamens five, unequal, 2—4 being antheriferous, the anthers two-celled; *ovary* surrounded by a glandular disk, two-celled, many-seeded; *style* one; *stigma* bilamellar; *capsule* two-valved, two-celled; *seeds* transverse, compressed, generally winged; *albumen* none; *embryo* straight, foliaceous; *radicle* centrifugal. *Trees*, or *shrubs*, often twining or climbing; *leaves* opposite, very rarely alternate, compound, or occasionally simple, without stipules; *inflorescence* terminal, somewhat panicled.

BIGNONIA. (Endl. Gen. Pl. 713.)

BIGNONIA ANTISYPHILITICA. (Mart.) Brazil.

The bark of the younger branches of this tree is considered in Brazil one of the most powerful remedies against syphilitic swellings which are of a malignant character; the decoction is chiefly used, and also the bark, dried and pounded, externally. (L.)

BIGNONIA CHICA. (H. et Bonpl.) *Bignonia triphylla.* (Willd.) South America.

The fine red fecula of the leaves, called *Chica*, is used in dyeing. (De Cand.) The substance called *Chica crajura*, or *carajura*, is obtained by boiling the leaves in water, and precipitating the red colouring matter by adding some pieces of the bark of an unknown tree, called *Arayana*. This colouring matter is light, inodorous, insipid or slightly bitter, insoluble in water, but soluble in alcohol, ether, and the oils and fats. It is also wholly dissolved by alkalies. Boussingalt and Rivero state that it is advantageously used in dyeing. (Virey.)

BIGNONIA ECHINATA. (Willd.) Guiana.

BIGNONIA RADICANS. (Willd.) North America.

Roots vulnerary, sudorific; employed in America against the bite of venomous animals. (G.)

BIGNONIA LEUCOXYLON. (Willd.) West Indies.

Alexiterial, used against the poison of the Manchineel apple. (G.)

CATALPA. (Endl. Gen. Pl. 711.)

CATALPA SYRINGIFOLIA. (Sims.) *Bignonia catalpa.* (Linn.) North America.

A decoction of the pods is used in Italy as a remedy for catarrhal dyspnœa and coughs. (*Gard. Mag.* xiii. 524.) According to Kœmpfer, a nearly allied species, or perhaps the same, has extremely bitter leaves and bark, and a decoction of the pods is employed in asthmatic complaints; the leaves are also used for fomentations. (L.)

JACARANDA. (Endl. Gen. Pl. 711.)

JACARANDA BRASILIANA. (Pers.) *Bignonia Brasiliana.* (Lamb.) Brazil.

Wood, green ebony, used in dyeing.

PARMENTIERA. (De Cand. ix. 244.)

PARMENTIERA CEREIFERA. (Seem.) *Palo de velas*, or *Candle tree.* Valley of the Chagres, South America.

This tree has received the above name in consequence of the similarity which its fruit bears to a candle. The fruit has an apple-like odour, and is used for feeding cattle, for which purpose it is of great value, being produced in its greatest abundance during the dry season when vegetation is all destroyed by the sun.

SESAMUM. (Endl. Gen. Pl. 709.)

SESAMUM INDICUM. (D. C.) *S. veterum* (Bauh.) East Indies.

Has mucilaginous leaves, and the seeds, like linseed, yield a mucilaginous meal, used in India for poultices. (L.)

SESAMUM ORIENTALE. (Willd.) *Gingelly, Guiggiolana, Jugeoline, Vangloe.* East Indies.

Seeds, parched and ground, eaten, or mixed whole with bread; yield oil. (G.) Seeds yield *oil of benne.*

ORDER 102.—POLEMONIDEÆ. (De Cand. Bot. Gal. p. 329.)

Calyx gamosepalous, five-partite, persistent, sometimes irregular; *corolla* regular, five-lobed; *stamens* five, inserted into the tube of the corolla, and alternate with its segments; *ovary* superior, free, three-celled; *style* simple; *stigma* trifid; *capsule* covered by the persistent calyx, three-celled, three-valved, few or many seeded, valves having a prominent rib or septum in the middle, which extends to the central trigonal axis; *seeds* often enveloped in mucus; *embryo* straight; *albumen* horny; *radicle* inferior; *cotyledons* elliptical, foliaceous. *Herbs*, with opposite, or occasionally alternate leaves; *stem* occasionally climbing.

POLEMONIUM. (De Cand. Bot. Gal. 329.)

*POLEMONIUM CÆRULEUM. (Linn.) (E. B. 14.) *Greek valerian, Jacob's ladder.*

Fl. blue. Banks and bushy places, Derbyshire and York; rare.

Root astringent, antidysenteric, and vulnerary.

ORDER 103.—CONVOLVULACEÆ. (Endl. Gen. Pl. 651.)

Calyx monophyllous, *persistent*, in five divisions, remarkably imbricated; *corolla* monopetalous, hypogynous, regular, deciduous, limb five-lobed, plaited; *stamens* five, inserted into the tube of the corolla; *ovary* simple, free, supported on a hypogynous disk, 2—4 celled, few-seeded; *style* simple, often divided; *capsule* 1—4 celled, containing 1—2 seeds, attached towards the base of the partitions, the valves fitting at their

edges to the angles of the partitions; *cotyledons* flat, and plicate; *embryo* curved, placed in the centre of a mucilaginous albumen. *Herbaceous plants*, or *shrubs*, usually twining and milky, smooth, or with a simple pubescence; *leaves* alternate, undivided, or lobed, seldom pinnatifid, with no stipules; *inflorescence* axillary, or terminal, peduncles one, or many flowered, the partial ones generally with two bracts.

ARGYREIA. (Endl. Gen. Pl. 654.)

ARGYREIA BRACTEATA. (Chois.) Madras.

Decoctions of the leaves are used by the natives as fomentations in cases of scrofulous enlargements of the joints, the boiled leaves being employed as a poultice at the same time; juice milky. (L. ex Wight.)

BATATUS. (Endl. Gen. Pl. 654.)

BATATUS PANICULATA. (Chois.) *Convolvulus paniculatus.* (Linn.) *Ipomea paniculata.* (Brown.) East Indies, New Holland, &c.

The large tuberous root is cathartic, and is used as such by the natives of the places where it grows. (L.)

BREWERIA. (Endl. Gen. Pl. 652.)

BREWERIA SCOPARIA. (Lindl.) *Convolvulus scoparius.* (Linn.) Canary Islands.

Wood, *rosewood*, hard, used by the fan-makers; shavings have the scent of roses. (G.) Wood perfumed, smelling strongly of roses, yellowish fawn colour, veined with red, burning readily when lighted; taste bitter, balsamic; yields by distillation an essential oil of bitter balsamic flavour, little used, except, according to Fée, for adulterating oil of roses. (*Lignum Rhodium Officin.*) (L.)

CALYSTEGIA. (Endl. Gen. Pl. 653.)

*CALYSTEGIA SEPIUM. (Brown.) (E. B. 313.) *Convolvulus tuguriorum.* (Forst.) *Convolvolus sepium.* (Linn.) *Bindweed.*

Fl. large, pure white. July, August. Perennial. Moist woods and hedges.

Juice purgative. (G.) Root purgative like scammony, but much less active. (L.)

*CALYSTEGIA SOLDANELLA. (Brown.) (E. B. 314.) *Convolvulus soldanella.* (Linn.) *Brassica marina, Sea colewort, Scotch scurvy grass, Soldanella, Sea-side bindweed.*

Fl. rose-coloured. August. Perennial. Sandy banks on sea-shore.

Root purgative. (G.) Contains, according to Mr. Planche, twenty-four per cent. of a green purgative resin. (L.)

CONVOLVOLUS. (Endl. Gen. Pl. 653.)

CONVOLVOLUS ALTHÆOIDES. (Linn.) *C. flexuosus.* (Buch.) South of Europe.

Roots purgative, may be substituted for jalap. (G.) According to M. Loiseleur Deslongchamps, the roots contain a purgative resin, in doses from 15 to 24 grains. (L.)

*CONVOLVOLUS ARVENSIS. (Linn.) (E. B. 312.) *C. sagittæfolius.* (Sal.) *C. prostratus.* (Schm.) *Small bindweed.*

Fl. rose-coloured or whitish. June, July. Perennial. Corn fields and hedges.

Juice purgative.

CONVOLVOLUS BATATAS. (Willd.) India.
Root, *Sweet potatoes*, *Spanish potatoes*, nutritive.

CONVOLVOLUS CANTABRICA. (Linn.) *C. terrestris.* (Linn.) *C. terminalis.* (Sal.) *Cantabrica*, *Convolvulus minimus*, *Lavender bindweed.* South of Europe.
Herb vermifuge.

CONVOLVOLUS CNEORUM. (Linn.) *Cneorum album*, *Dorycnium*, *Rock rose.* Levant.
Root purgative.

CONVOLVOLUS EDULIS.
Root eaten.

CONVOLVOLUS FLORIDUS. (Linn.) Canary Islands.
Root used as an errhine; wood, *rosewood*, of good quality. (G.)

CONVOLVOLUS MACROCARPUS. (Willd.) South America.

CONVOLVOLUS PAPIRIN.
Roots purgative.

CONVOLVOLUS SCAMMONIA. (Linn.) *Aleppo scammony plant.*
Hedges and bushy places in Greece and the Levant.
Roots yield by incision *Aleppo scammony.* (G.) The hard brittle ash-coloured resin, called *Scammony*, is obtained from the roots of this plant, which, however, according to Sibthorpe, is not the Εκαμμωνια of Dioscorides, which he refers to Convolvolus farinosus. The quality of the drug is so extremely uncertain, that the gatherers have been supposed to collect different species of convolvolus instead of the genuine one; but it appears from the reports of the Smyrna merchants, that this is not the case; the roots of young plants produce a less active juice than old ones, and the colour of the scammony is more or less intense, according as the plants grow in sunny or shady places; but the quality of the resin is not considered to be affected by this circumstance; the difference in samples proceeds principally from the manipulations of the Jews, and the greater or less care of the peasants in collecting the drug: it is certain that Sibthorpe was under a mistake in referring the Aleppo scammony to C. farinosus, a Madeira species. Dioscorides describes scammony as having κλωνας εμφαινοντας τι δασυτητος, according to the usual reading, and this certainly does not agree with C. scammonia, and would apply better to the C. sagittifolius found in Samos, and other islands of the Archipelago, but we know nothing of this plant producing anything like scammony; it is more probable that the text of Dioscorides is corrupt, and that the reading in the Aldine edition of 1499, of ταχυτητος for δασυτητος, is more genuine, in which case the description of the ancient author suits C. scammonia. (L.) The districts in which scammony is collected are widely extended. The peasants of Smyrna and of the neighbouring villages extend their peregrinations to Adalia on the south, and Brussa or Mount Olympus on the north, and sometimes as far as Angora. The scammony is collected by the Greek and Turkish peasants while the plant is in flower. The soil is removed from the root to the depth

of three or four inches; the root is then cut through in a slanting direction, about one inch below the crown, and a mussel-shell is placed to receive the sap, which exudes early in the morning and late in the evening, but not during the hottest part of the day. This, when dry, constitutes the *pure lachryma scammony*. (S. H. Maltass.) I have been informed by a Turkey merchant, who formerly resided at Smyrna, that scammony is brought into Smyrna, in the soft state, on camels. Here it is mixed with various impurities by persons (Jews) who are denominated scammony-makers, and who adulterate it, and thereby lower its value to suit the market. (Pereira.)

CUSCUTA. (Endl. Gen. Pl. 653.)

*CUSCUTA EPITHYMUM. (Willd.) (E. B. 55.) *Epithymum, Dodder of thyme, Lesser dodder.*

Fl. rose-coloured. August. Annual. Parasite on furze and other heath plants.

*CUSCUTA EUROPÆA. (Willd.) (E. B. 378.) *Greater dodder, Hell weed.*

Fl. rose-coloured, stem red. August, September. Annual. Parasite on nettles, flax, &c.

Juice purgative, deobstruent, externally used against the itch.

IPOMEA. (Lind. Nat. Syst. 231.)

IPOMEA BRAZILIENSIS. (Linn.) *Convolvolus braziliensis, Sea-side potato slip.*

Root in decoction purgative, yields scammony. (G.)

IPOMEA CATHARTICA. (Poir.) *Pharbitis cathartica.* (Chois.) St. Domingo.

Roots furnish a resinous substance, used as a purgative in St. Domingo; its use is, however, not very safe, as it is apt to produce superpurgations. (L.)

IPOMEA MACRORHIZA. (Michx.) *Batatas jalapa.* (Chois.) Georgia and Carolina.

Root purgative. (G.) Said to be the *Convolvolus jalapa* of Linnæus, but possesses no purgative properties whatever; Dr. Baldwin administered eight drachms of the powdered root without effect, so that, in fact, it contains little or no resin, but, like the Batatas, consists chiefly of saccharine and farinaceous matter. (L.)

IPOMEA MECHOACANNA. (Linn.) Mexico.

Root, *Mechoacan, Mechoacanna alba*, less active than jalap, and less fatiguing. (G.) The slightly purgative *Mechoacan root* of Mexico is possibly produced by some species of this genus, but the Convolvolus mechoacannus of Willdenow, or the Ipomea mechoacanna of Nees and Ebermaier, is too little known to be described; Wood and Bache refer it to I. macrorhiza. (L.) Purgative properties comparatively trifling. (O'Sh.)

IPOMEA OPERCULATA. (Mart. et Spix.) *Convolvolus operculatus.* (Gomez.) *Operculina convolvulus.* (Silv.) *Convolvulus macrocarpus.* (Linn.) *Conv. frutescens.* (Mill.) *Piptostegia operculata.* (Hoffm.) Brazil.

Said by Guibourt to furnish part of the *Mechoacan* of commerce. (L.)

IPOMEA ORIZABENSIS. South America.

Lindley supposes this to be the Convolvolus orizabensis of Pellatan, as quoted by Dr. Pereira in Med. Gaz. xx. 932. Dr. Schiede had heard of it under its Spanish name of *Jalapa macho*, or *Purga macho*, or *Male jalap*, but he had only seen the root, which appears very like that of I. purga. (L.)

IPOMEA PANDURATA. (Mey.) *Convolvulus panduratus.* (Linn.) *Wild potato.* North America.

Root purgative. (G.) The powdered root acts like rhubarb; it requires to be given in larger doses than jalap; it has an American reputation as a remedy for calculous affections, and in cases of gravel. (L.) The root, which is the officinal part, is very large, two or three feet in length, and from three inches thick to the thickness of a man's thigh. It has a somewhat acrid taste. Forty grains of the dried root is said to purge gently. (Wood and Bache.)

IPOMEA PURGA. (Wender.) *I. Jalapa.* (Royle.) South America.

From the statements of Dr. Schiede and others, confirmed by an unpublished letter in the possession of the Horticultural Society of London, from Don Juan de Orbegozo, a pupil of Cervantes residing at Orizaba, it appears certain that this plant furnishes the jalap of commerce; it is, however, equally certain, from the information furnished by the latter gentleman, that I. orizabensis is considered by the traders in jalap to be extremely similar in quality, and as it is the more abundant and larger of the two, at least in some districts, the probability is, that it also forms a part of the imported samples of this drug. (L.) Root, *Jalap*, *Jalapium*, *Jalapa*, *Mechoacanna nigra*, *Jalapæ radix*, a very active purgative in doses of ʒss. to ʒj. in powder; in hypochondriacal diseases and bilious temperaments, it gripes violently, and seldom acts properly as a purge, unless combined with the potassæ bitartras and a little ginger; from South America. (G.) A most valuable purgative, dose 10 to 30 grs.; usually given with twice its weight of cream of tartar and a little ginger. (O'Sh.) A powerful and drastic purgative; when judiciously exhibited, both safe and efficacious. (Pereira.)

IPOMEA QUAMOCLIT. (Linn.) *Conv. paniculatus.* (Blanc.) *Batatas tuberosa.* (Boj.) East Indies.

Root used as a sternutatory.

IPOMEA TUBEROSA. (Linn.) *Convolvolus tuberosus.* (Spreng.) *Quamoclit vulgaris.* (Chois.) *Seven-eared*, or *Spanish arbour vine.* Jamaica.

Root purgative. (G.) All the parts purgative; Dr. Barham thinks scammony might be obtained from it. (L.)

IPOMEA TURPETHUM. (Brown.) *Conv. Turpethum.* (Linn.) *Operculina Turpethum* (Silv.) *Spiranthera Turpethum.* East Indies, &c.

Root, *Turbith*, *Turbeth*, *Turpethum*, similar to jalap, rougher in its operation. (G.) The fresh bark of the root, rubbed up in milk, is used in India as a purgative; about six inches in length of a root, as thick as the little finger, is reckoned a dose. (L.) From experiments

carefully conducted, O'Shaughnessy says he feels warranted in asserting that the action of this medicine is so extremely uncertain, that it does not deserve a place in our Pharmacopœia. (*Bengal Dispensatory.*)

PHARBITIS. (Endl. Gen. Pl. 654.)

PHARBITIS NIL. (Chois.) *Convolvolus Nil.* (Linn.) *Ipomea cœrulea.* (Roxb.) *Ipomea Nil.* (Roth.) *Conv. hederaceus.* (Linn.) *Convolvuloides triloba.* (Mönch.) East Indies.

Seeds sold in apothecaries' shops of Calcutta, under the name of *Kala dana*, as a purgative; said to be an effectual quick cathartic. Seeds are roasted like coffee, powdered, and administered in doses of from 30 to 40 grains, in any convenient article. (L. ex Roxburgh.) An exceedingly cheap remedy, perfectly equal to jalap as a cathartic, superior to it in portability and flavour. (O'Sh.)

ORDER 104.—BORAGINEÆ. (De Cand. Bot. Gal. 331.) ASPERIFOLIÆ. (Endl. Gen. Pl. 644.)

Calyx gamosepalous, five-lobed, persistent; *corolla* generally regular, five-cleft, the throat often closed with projecting appendages, imbricate in æstivation; *stamens* five, inserted into the corolla, and alternate with its segments; *ovary* 2—4 lobed, free, within an hypogynous disk; *style* simple, persistent, arising from between the lobes of the ovary; *stigma* entire or bilobed; *nuts* or *cariopsides* 2—4, one-celled, one-seeded, adnate to the style by the inner side; *seeds* separable from the pericarps; *albumen* none; *embryo* straight; *radicle* inferior; *cotyledons* foliaceous. *Herbaceous plants*, or *shrubs*, *leaves* alternate, covered with asperities consisting of hairs proceeding from an indurated enlarged base; *flowers* in one-sided, gyrate spikes, or racemes, or panicles, sometimes solitary or axillary.

The plants of this order are refreshing. (G.) No plants of this order are of any real importance in medicine. (L.)

ANCHUSA. (De Cand. Bot. Gal. 334. Endl. Gen. Pl. 648.)

ANCHUSA ITALICA. (Retz.) *A. officinalis.* (Gon.) *Bugloss.* Italy, Greece.

Of no real medicinal value, being simply emollient, mucilaginous, and perhaps slightly diuretic. (O'Sh.)

*ANCHUSA OFFICINALIS. (Willd.) (E. B. 662.) *Buglossum hortense*, *Common alkanet*, *Garden bugloss*, *Ox tongue.* (A doubtful native.)

Fl. deep purple. July. Perennial. Waste ground in Northumberland, &c.

Flowers cordial, the tops were formerly used in cool tankards; leaves refreshing, moistening, contain nitre. (G.) Roots mucilaginous; used in China for promoting the eruption of the small-pox. (Lou.)

ANCHUSA TINCTORIA. (Willd.) *Alkanet.* South of France.

Roots communicate a fine deep red to oils, wax, and all unctuous substances, as well as to spirits of wine; it is used chiefly by the apothecaries for colouring plasters, lip-salves, &c., and by vintners for staining the corks of their port-wine bottles, or for colouring and flavouring the spurious compounds sold as port-wine. (Lou.) The alkanet of Constantinople is produced by a different order of plants

altogether, being the root of *Alcanna vera*. (Nat. Ord. *Salicariæ*.) (O'Sh. ex Fée.)

ANCHUSA VIRGINICA.
Root used as alkanet.

ASPERUGO. (De Cand. Bot. Gal. 335. Endl. Gen. Pl. 650.)

*ASPERUGO PROCUMBENS. (Linn.) (E. B. 661.) *German madwort, Great goose-grass, Small wild borage.*
Fl. light blue. June, July. Annual. Waste places, Purfleet, Scotland.
Root sudorific, also used with oil as a dressing for wounds.

BORAGO. (De Cand. Bot. Gal. 334. Endl. Gen. Pl. 650.)

*BORAGO OFFICINALIS. (Linn.) (E. B. 36.) *Common borage.*
Fl. bright blue. June, July. Biennial. Among rubbish and near ruins.
Qualities the same as those of Anchusa officinalis. (G.) Pliny says that wine, with this infused in it, cheers the spirits; it was formerly in great repute as a cordial; according to Withering, the young leaves may be used as a salad or potherb. (Lou.) The whole plant has an odour approaching to cucumber and burnet, which gives a flavour to a cool tankard; but its supposed exhilarating qualities, which caused borage to be reckoned one of the four cordial flowers, along with alkanet, roses, and violets, may justly be doubted. (Smith.) It was once esteemed as a pectoral medicine, and a decoction of its leaves mixed with honey makes a good ptisan. (L.)

CYNOGLOSSUM. (De Cand. Bot. Gal. 336. Endl. Gen. Pl. 650.)

CYNOGLOSSUM OFFICINALE. (Linn.) (E. B. 921.) *Cynoglossum, Common hound's tongue.*
Fl. purplish red. June, August. Biennial. Shady places in the east and middle of England. Rare.
Roots astringent and sedative; used externally and internally in decoction in scrofula; the herb bruised drives away mice. (G.) Smells like mice; was considered antiscrofulous; is disliked by cattle. (Lou.) Once officinal, being used as an antispasmodic, but it is so fœtid that it has long since ceased to be exhibited; Smith says it is narcotic. (L.) Of no medicinal importance. (O'Sh.)

ECHIUM. (De Cand. Bot. Gal. 332. Endl. Gen. Pl. 647.)

ECHIUM ITALICUM. (Willd.) *Onosma, Stone bugloss.* Jersey.
Leaves in wine facilitate delivery. (G.)

ECHIUM RUBRUM. (Jacq.) *E. creticum.* (Pall.) *E. italicum.* (Gmel.) *E. Rossicum.* (Gmel.) *True alkanet.* Hungary.
Bark of the root colours oily substances red; used in lip-salves; juice of the fresh roots used to redden the cheeks; colouring matter extracted by ether. (G.)

*ECHIUM VULGARE. (Linn.) (E. B. 181.) *Echium, Viper's bugloss.*
Fl. blue. July. Biennial. On sandy and chalky soils.
Perhaps the handsomest of European flowers. (Lou.) Root opening and slightly astringent. (G.)

HELIOTROPIUM. (De Cand. Bot. Gal. 331. Endl. Gen. Pl. 646.)

HELIOTROPIUM EUROPÆUM. (Linn.) *Turnsol.* South of Europe.

Softens warts and makes them fall off; taken internally, it opens the belly; flowers used as a blue colour, when altered by ammonia as a purple, and by acids as a red. (G.) It was called *Verrucaria* by the Latins, because the juice mixed with salt was said to be excellent in removing warts. (Lou.)

HELIOTROPIUM INDICUM. (Linn.) *Heliophytum fœtidum.* (O'Sh. Beng. Disp. p. 496.) *Indian turnsol.*

Plant slightly bitter, juice of the leaves applied to painful gumboils and to repel pimples on the face; also used in inflamed or excoriated tarsi. In Jamaica, it is used with castor oil to relieve the pain of scorpion stings, and in the treatment of hydrophobia. (O'Sh.)

HELIOTROPIUM JAMAICENSE. *Jamaica turnsol.* West Indies.

Plant in decoction diuretic.

HELIOTROPIUM SUPINUM. (Linn.) *Piptoclaina supina.* (Don.) *Lithospermum heliotropoides.* (Forsk.) *H. minus, Small turnsol.* South of Europe.

Herb laxative, seeds emmenagogue.

LITHOSPERMUM. (De Cand. Bot. Gal. 332. Endl. Gen. Pl. 648.)

*LITHOSPERMUM ARVENSE. (Linn.) (E. B. 123.) *Ægonychon arvense.* (Gray.) *Corn gromwell, Bastard alkanet.*

Fl. white. May, June. Annual. Corn-fields. Common.

Bark abounds with a deep red dye, which stains paper, linen, &c., and is easily communicated to oily substances, like the alkanet root, and hence called *Bastard alkanet;* the country girls in the north of Sweden stain their faces with the root on days of festivity. (Lou.)

*LITHOSPERMUM OFFICINALE. (Linn.) (E. B. 134.) *Lithospermum, Milium solis, Grey millet, Gromwell.*

Fl. pale yellow. June. Perennial. Dry waste places.

Seeds being like a stone, were for that reason formerly used as a cure for that disease. (Lou.) Having no efficacy, are not at present employed.

LYCOPSIS. (De Cand. Bot. Gal. 334. Endl. Gen Pl. 648.)

*LYCOPSIS ARVENSIS. (Linn.) (E. B. 930.) *Anchusa arvensis.* (Lehm.) *Bugloss, Small wild bugloss.*

Fl. blue purple. June. Annual. Corn-fields and road-sides.

LYCOPSIS VESICULARIA. *Creeping bugloss.*

Pectoral plants.

MYOSOTIS. (De Cand. Bot. Gal. 335. Endl. Gen. Pl. 649.)

*MYOSOTIS ARVENSIS. (Willd.) (E. B. 2629.) *Myosotis scorpioides* α. (Linn.) *Field scorpion grass, Mouse-ear.*

Fl. blue. June, July. Annual. Cultivated grounds, and on banks.

*MYOSOTIS PALUSTRIS. (With.) (E. B. 1973.) *M. perennis.* (Mönch.) *Echioides palustris.* (Mönch.) *M. scorpioides* β. (Linn.) *Forget me not, Great water scorpion grass.*

Fl. bright blue. June, September. Perennial. Ditches and sides of rivers.

Pectoral.

ONOSMA. (De Cand. Bot. Gal. 334. Endl. Gen. Pl. 647.)

ONOSMA ECHIOIDES. (Linn.) *Onosma arenaria.* (Spreng.) *Small yellow alkanet.* South of Europe.

Root used as alkanet.

PULMONARIA. (De Cand. Bot. Gal. 333. Endl. Gen. Pl. 647.)

*PULMONARIA OFFICINALIS. (Linn.) (E. B. 118.) *P. maculosa, Cowslips of Jerusalem, Common lungwort, Sage of Jerusalem, Spotted comfrey, Spotted lungwort.*

Fl. purple. May. Perennial. Woods and thickets, Hampshire, &c. Not common.

Root sudorific, used with oil as a dressing for wounds. (G.) It must not be inferred from English names of this sort having been applied to plants, either that lungwort was ever used in this country for the lungs, or liverwort for the liver; the truth is, the old herbalists made English names after their Latin denominations, without inquiring whether such continued to be applicable or not, and their less informed successors had no difficulty in finding those virtues in the plants which were indicated by the names of the translators. (Lou.)

SYMPHYTUM. (De Cand. Bot. Gal. 334. Endl. Gen. Pl. 649.)

SYMPHYTUM OFFICINALE. (Linn.) (E. B. 817.) *Consolida major, Symphytum, Comfrey, Great consoude.*

Fl. yellowish or purplish. June, July. Perennial. Banks of rivers and ditches.

Root astringent, glutinous; leaves used to flavour cakes, young shoots esculent. (G.) Formerly in much repute as a vulnerary, but now not employed. (L.) Abounds in mucilage, and may be employed for Althæa officinalis. (Lou.) The recent root is in popular use in France in cases of rupture and bruises. (O'Sh.)

TRICHODESMA. (Endl. Gen. Pl. 650.)

TRICHODESMA ZEYLANICUM. *Borago zeylanica.* (Linn.) *T. Kotschyanum.* (Fenzl.) East Indies, &c.

Considered as diuretic; one of the cures for snake-bites in India. (L.)

ORDER 105.—CORDIACEÆ. (R. Brown Prod. 492. Endl. Gen. Pl. 643.)

Calyx inferior, five-toothed; *corolla* monopetalous, with the limb in five divisions; *stamens* alternate with the segments of the corolla, out of which they arise; *anthers* versatile; *ovary* superior, four-celled, with one pendulous ovule in each cell; *style* continuous; *stigma* four-cleft, with recurved segments; *fruit* drupaceous, four-celled, part of the cells frequently abortive; *seed* pendulous from the apex of the cells by a long funiculus, upon which it is turned back; *embryo* inverted, with the cotyledons plaited longitudinally; *albumen* none. *Trees: leaves* alternate, scabrous, without stipules, of a hard, harsh texture; *flowers* panicled, with minute bracts.

CORDIA. (Endl. Gen. Pl. 643.)

CORDIA ANGUSTIFOLIA. (Roxb.) *Varronia angustifolia.* (Vest.) *Varronia curassavica.* (Poir.) India.

Bark much used in India for making astringent gargles. (O'Sh.)

CORDIA GERASCANTHUS. (Jacq.) West Indies.

Wood, *Jamaica rosewood*, fine scented, used by the cabinet-makers, and distilled for its oil.

CORDIA LATIFOLIA. (Roxb.) Hindostan.

Under the name of *Sebesten plums*, *Sebestans*, or *Sepistans*, two sorts of Indian fruit have been employed as pectoral medicines, for which their mucilaginous qualities, combined with some astringency, have recommended them; they are believed to have been the *Persea* of Dioscorides; according to Mr. Colebrooke, this is a larger and more mucilaginous sort than that described by European writers on materia medica, which is the produce of *C. myxa.* (L.)

CORDIA MYXA. (Linn.) *Sebestena officinalis.* India, Persia, Arabia, &c.

Fruit, *Sebestens myxa*, is esculent, laxative; birdlime is made from it; wood tough, solid, used for procuring fire by friction. (G.) The smell of the nut when cut is heavy, the taste of the kernels like that of fresh filberts; it is the true *Sebesten* of the European Materia Medica; the fruits, according to Roxburgh, are not used in the northern Circars of India for any medicinal purpose; when ripe, they are eaten by the natives, and also most greedily by several sorts of birds, being of a sweetish taste; the wood is soft, and of but little use except as fuel; it is reckoned one of the best kinds for kindling fire by friction, and is thought to have furnished the wood from which the Egyptians constructed their mummy cases; the bark is said by Dr. Royle to be accounted a mild tonic. (L.) Has a viscid, mucous juice, used for glue in the east; leaves, bruised with those of *Datura metel*, applied to the forehead in headache. (Lou.) Seeds deemed an infallible remedy in ringworm, the powder mixed with oil being applied to the eruption. (O'Sh.)

CORDIA SEBESTENA. (Willd.) West Indies.

Flowers very beautiful and ornamental; a small piece of the wood put on a pan of lighted coals, will perfume the whole house; from the juice of the leaves, with that of a species of fig, is prepared the fine red colour with which they dye their clothes in Otaheite. (Lou.)

The dried fruits of this genus are very glutinous in the fresh state. They are slightly laxative, but it is especially as a pectoral that they are esteemed in India. In Java, the fruit is used in gonorrhœa and ardor urinæ; twelve drachms of the pulp are said to be equal in aperient effect to the same quantity of cassia pulp. (O'Sh.)

ORDER 106.—SOLANEÆ. (De Cand. Bot. Gal. 337.) SOLANACEÆ. (Endl. Gen. Pl. 662.)

Calyx gamosepalous, equal, generally persistent, five (rarely four) cleft or partite; *corolla* gamopetalous, generally regular, five (rarely four) cleft, deciduous, plicate in

æstivation; *stamens* five, inserted into the base of the corolla, alternate with, and equal to, the number of its lobes; *ovary* free, simple; *style* one; *stigma* simple; *fruit* either a two-celled capsule, the dissepiments parallel to the valves, or a berry, the receptacle seminiferous and central; *seeds* numerous; *albumen* fleshy; *embryo* straight, or curved; *cotyledons* semiterete, elongated. *Herbs*, or rarely *shrubs*, with alternate, simple, or lobed *leaves*; *flowers* often extra-axillary.

ATROPA. (De Cand. Bot. Gal. 338. Endl. Gen. Pl. 666.)

*ATROPA BELLADONNA. (Linn.) (E. B. 592.) *Belladonna*, *Solanum furiosum*, *S. lethale*, *S. maniacum*, *Dwale*, *Deadly nightshade*.

Fl. drooping, lurid purple. June. Perennial. Waste places, but not common.

Leaves, *Belladonnæ folia*, applied to the eye, paralyse the iris; are useful in cancer and scrofula, either applied as poultices, or sprinkled over the sores; used also internally in doses of gr. j. to iij. in obstinate diseases, acting as a narcotic, diaphoretic, diuretic, and sialogogue; berries eaten in an overdose, that is, more than three or four, are poisonous; vinegar is the best antidote, as emetics, even tartar emetic, ℈ss., have in this case scarcely any action; juice of the berries cosmetic, rendering the cheeks pale. The narcotic properties of this substance depend on its containing the alkaloid *Atropa*. (G.) A dangerous narcotic; every part of the plant is poisonous, and children and the ignorant have often suffered from eating the berries, the beautiful appearance and sweet taste of which render them very alluring; the symptoms which they induce are those of intoxication, accompanied with fits of laughter and violent gestures, great thirst, difficulty of deglutition, nausea, dilatation of the pupil, with the eyelids drawn down, redness and tumefaction of the face, stupor or delirium, a low and feeble pulse, paralysis of the intestines, convulsions, and death. In medicine, belladonna is not only narcotic, but diaphoretic and diuretic; it is extensively employed, especially in producing dilatation of the pupil when its infusion is dropped into the eye; among other properties, it is said by Hahnemann and Koreff to protect the individual who takes it from the contagion of scarlatina. (L.) Belladonna has been employed with success as an anodyne in neuralgia, tic-douloureux, arthritic pains, painful ulcers, and glandular enlargements, also as an antispasmodic, resolvent, and discutient; in maladies of the eyes it is used to dilate the pupil, and has also been found beneficial in epilepsy, mania, hysteria, chorea, and other maladies of the centro-spinal system; as a defence against scarlatina, its efficacy is exceedingly doubtful. (Pereira.)

CAPSICUM. (De Cand. Bot. Gal. 337. Endl. Gen. Pl. 665.)

**CAPSICUM ANNUUM. (Linn.) *Capsicum fastigiatum*. (Blume.) *Capsicum*, *Chilly*.

Fl. whitish, small. July, August. Annual. Gardens. Native of South America.

Berries, *Spanish pepper*, *Pepper pods*, *Guinea pepper*, *Capsici baccæ*, *Capsicum*, *P. U. S.*, which are fleshless, are of a burning heat, irritating, attenuant, used as a sauce, or to give a false strength to vinegar, spirits, &c.; infused in vinegar, used as a gargle. (G.) The fruit and seeds are a powerful stimulant, without any narcotic pro-

perty; the well-known condiment called *Cayenne pepper* consists principally of the ground seeds; it is employed in medicine, in combination wita cinchona, in intermittents and lethargic affections, also in atonic gout, dyspepsia accompanied by flatulence, tympanitis, paralysis, &c.; its most valuable application appears, however, to be in cynanche maligna and scarlatina maligna, used either as a gargle, or administered internally. (L.)

CAPSICUM BACCATUM. (Willd.) *Bird pepper.* West Indies.
Has similar properties to the last, but is more acrimonious. (L.) Fruit gathered when ripe, dried in the sun, pounded and mixed with salt, is commonly known by the name of *Cayenne pepper;* a mixture of sliced cucumbers, shallots, or onions, cut very small, a little lime-juice and Madeira wine, with a few pods of bird pepper well mashed and mixed with the liquor, seldom fails to provoke the most languid appetite in the West Indies; it is there called *Mandram;* gathered fresh from the plant, the pods of all the species are liberally used, both in the East and West Indies, to assist digestion and correct flatulencies. (Lou.)

CAPSICUM FRUTESCENS. (Linn.) *Piper indicum, India berries, Bird pepper, Red pepper, Cayenne pepper, Guinea pods, Tschillies.*
Used for C. annuum. (G.) Is more acrimonious than C. annuum. (L.) This plant furnishes the Cayenne pepper of the shops; the ripe pods are dried in the sun, and then in an oven after bread is baked, in an earthen or stone pot with flour between the strata of pods; when quite dry, they are cleaned from the flour, and beaten or ground to fine powder. To every ounce of this a pound of wheat flour is added, and it is made into small cakes with leaven; these are baked, cut into small pieces, and baked again, that they may be as dry and hard as biscuit, and then are beaten into powder and sifted; it is then fit for use as a pepper, or for being packed up in a compressed state, and so as to exclude air, for exportation. (Lou.)

CAPSICUM GROSSUM. (Willd.) *Coffrée tschillie.* India.
Flesh of the berry pickled.

CESTRUM. (Endl. Gen. Pl. 667.)

CESTRUM AURICULATUM. (Willd.) South America.
CESTRUM HEDIUNDA. (Lamb.) South America.
CESTRUM LAURIFOLIUM. (Willd.) South America.
Febrifugal, used externally as astringents. (L. ex Martius.)
CESTRUM MACROPHYLLUM. (Vent.) West Indies.
CESTRUM NOCTURNUM. (Willd.) East Indies.
Have properties similar to those of

CESTRUM VENENATUM. (Thunb.) Cape of Good Hope.
A decoction of the bark, reduced to the thickness of jelly, is used by the Hottentots to envenom their weapons; it is said to be a fatal poison, and to be also used by the same people to destroy wild beasts, by impregnating baits of flesh with its juice. (L.) The fruit of all the species is poisonous. (Loud.)

CRESCENTIA. (Lindl. Med. Bot. 514. Endl. Gen. Pl. 723.)

CRESCENTIA CUJETE. (Linn.) *Calabash tree.* West India islands.

Pulp used in diarrhœa, dropsy, headache, also internally in burns and in *coups de soleil;* expressed juice of the pulp ℥iiij. is purgative; a pectoral syrup is also made from it, which is sent over to Europe. (G.) From the pulp of the fruit a syrup is prepared in the West Indies, having a great reputation as a pectoral medicine, and as a remedy for internal bruises; Dr. Wright recommends the pulp as an excellent poultice for bruises and inflammation. (L.) The fruits, after the inside has been scooped out, are dried by the natives of the countries where they grow, and serve for containing water and other fluids. (Loud.)

DATURA. (De Cand. Bot. Gal. 339. Endl. Gen. Pl. 663.)

DATURA METEL. *Metel.* India.

Seeds narcotic, more powerful than *D. stramonium;* produce temporary idiotcy; used for frauds. (G.)

*DATURA STRAMONIUM. (Linn.) (E. B. 1288.) *Stramonium, Thorn apple.*

Fl. white. July. Annual. Waste places. Originally from America.

Herb a strong narcotic, even when mixed with tobacco and smoked; much used lately in asthma; externally the leaves, *Stramonii folia,* are anodyne, and used in headache and gout; seeds, *Stramonii semina,* may be given in powder to gr. x.; expressed juice, made into an ointment with hog's lard, used for irritable ulcers, burns, and scalds. (G.) A violent narcotic poison when taken internally, acting fatally if taken in large doses; in skilful hands, it is a valuable remedy in mania, epilepsy, convulsions, tic-douloureux, &c.; it palliates the distressing paroxysms of pure spasmodic asthma, when smoked, for which purpose Bigelow recommends the leaves in preference to the root, in which it is obvious he must be right, as the plant is an annual; it is also employed successfully as an external application, as an anodyne and sedative in burns, hæmorrhoids, irritable ulcers, &c. (L.) The effects of the plants of this genus are similar to those of Atropa and Hyoscyamus; they are frequently employed by the Indian poisoners for the purpose of producing lethargy without killing, in order to facilitate theft and other criminal designs. (O'Sh.)

DATURA TATULA. (Linn.) North America, Portugal, South of France.

Very nearly the same as *D. stramonium,* and having similar properties.

HYOSCYAMUS. (De Cand. Bot. Gal. 339. Endl. Gen. Pl. 664.)

HYOSCYAMUS ALBUS. (Linn.) *Great white henbane.* South of Europe.

Milder than the black; seeds used in spitting of blood.

*HYOSCYAMUS NIGER. (Linn.) (E. B. 591.) *Hyoscyamus, Common henbane.*

Fl. dingy yellow, veined with purple lines. July. Biennial. Waste places.

Leaves, *Hyoscyami folia*, a very powerful narcotic in doses of gr. iij. to gr. x.; externally are anodyne or resolvent; seeds, *Hyoscyami semina*, narcotic, gr. iij. to gr. x., less uncertain than the leaves; their smoke, applied by a funnel, is used in toothache. (G.) A powerful narcotic; the capsules and seeds of which, smoked like tobacco, are a rustic remedy for toothache, but convulsions and temporary insanity are said to be sometimes the consequence of their use; used medicinally, the leaves produce effects very similar to those of opium; it is employed with advantage in painful and spasmodic affections, hysteria, rheumatism, and gout; also combined with colocynth in painter's colic and mania; it is also used externally to allay the irritation of very sensitive parts; and the infusion dropped into the eye, dilates the pupil like Belladonna. (L.) Employed in this country as an anodyne, soporific, antispasmodic, and sedative, in cases where opium would disagree, and also to dilate the pupil, but is less powerful for this last purpose than *Belladonna;* it is also used in fomentations as a topical sedative and anodyne; the powder of the leaves is rarely employed, the extract and tincture being the preparations commonly used. (Pereira.)

MANDRAGORA. (Endl. Gen. Pl. 666.)

MANDRAGORA OFFICINALIS. (Willd.) *Atropa mandragora*, *Mandragora*, *Mandrake.*

Formerly supposed to be aphrodisiac, root gr. iij., narcotic, or it may be steeped in wine; leaves externally used, as anodynes and resolvents, as also the powder of the root to indurated glands. (G.) A venomous plant, once an important engine in the days of medical charlatanry, from the roots being supposed to bear a resemblance to the human form; in old herbals, the figures display the male mandrake with a long beard, and the female with a long head of hair; on the Continent the mandrake root is still sold to insure boys or girls to pregnant women, procure happy births, &c.; in the seaport towns of France, mountebanks frequently expose them for sale. (Loud.)

NICANDRA. (Endl. Gen. Pl. 665.)

NICANDRA PHYSALODES. (Gaertn.) *Atropa physalodes.* (Linn.) Peru.

Diuretic. (L.)

NICOTIANA. (De Cand. Bot. Gal. 239. Endl. Gen. Pl. 663.)

NICOTIANA PERSICA. (Lindl. Bot. Regis. t. 1592.) Persia.

Produces the delicate and fragrant tobacco of Shiraz. (L.)

NICOTIANA RUSTICA. (Linn.) *N. minor*, *English Tobacco.* South of Europe.

Leaves narcotic, sometimes sold as those of mandrake. (G.) Syrian and Turkish tobaccos are prepared from this species, which is much more mild in its operation than N. tabacum. (L.) The celebrated Shiraz tobacco is also the produce of this species. (O'Sh.)

NICOTIANA TABACUM. (Linn.) *Tabacum*, *Nicotiana*, *Petum*, *Tobacco.* West Indies.

Leaves, *Tabaci folia*, when green, detersive, acrid, narcotic, and apo-phlegmatizant; used externally in diseases of the skin, and as a

dressing to verminous sores: and internally as an emetic, gr. iij. to gr. x., in water ℥ iiij., and in dropsy and palsy; their smoke is used as a pleasant mode of losing time, and as a stimulating clyster in apoplexy, inveterate costiveness, and apparent death by drowning or hanging; in which last case, however, it is sometimes improper, as, if it does not immediately succeed, it exhausts the patient so much as to render other means ineffectual: imported from America and the West Indian islands. (G.) This species yields the *Virginian*, *Havannah*, and *Pigtail tobacco* of the shops, and probably the principal part of that which comes from India in the form of *Cheroots*. It is a powerful stimulant narcotic, employed medicinally as an errhine, in infusion as an expectorant and sedative, and in vapour both as an antispasmodic, and to bring on nausea and fainting; tobacco enemata have been found useful in relaxing the parts implicated in strangulated hernia, but the remedy is dangerous; when chewed it appears to act deleteriously, impairing the appetite, and bringing on torpor of the gastric nerves; although, if smoked in moderate quantities, it acts as a harmless excitant and sedative, yet it is a frequent cause of paralysis when the practice is indulged in to excess. *Oil of tobacco*, which is inhaled and swallowed in the process of smoking, is one of the most violent of known poisons; the Hottentots are said to kill snakes by putting a drop of it on their tongues, and the death of these reptiles is said to take place as instantaneously as if by an electric shock; dangerous symptoms are reported to have followed the application of the ointment to scald heads. (L.) In the case of a boy aged eight years, to whose head the expressed juice of tobacco was applied, for the cure of tinea capitis, death took place three hours and a half after the application. It has been employed in colic, ileus, strangulated hernia, constipation, ischuria, dysury, tetanus and other spasmodic disorders, dropsy, and also as a topical remedy in gout and rheumatic inflammation of the joints, testicles, and sclerotic coat of the eye, and in erysipelatous inflammation. (Pereira.)

PHYSALIS. (De Cand. Bot. Gal. 338. Endl. Gen. Pl. 665.)

PHYSALIS ALKEKENGI. (Linn.) *Alkekengi*, *Halicacabum*, *Winter cherry*. South of Europe.

Berries antinephritic, lithontriptic, and diuretic; if, in gathering them, they are rubbed against the calyx, they acquire a nauseous taste, and become purgative. (G.) Diuretic, employed in veterinary practice. (L.) Berries acidulous and slightly bitter; they were esteemed detergent and aperient by the ancients; in Spain, Germany, and Switzerland, they are eaten as a common fruit. (Loud.)

PHYSALIS ANGULATA. (Willd.) *Jamaica winter cherry*. America.

Juice of the plant, with cayenne pepper, diuretic; cures the colic.

PHYSALIS SOMNIFERA. (Linn.) *Solanum somniferum*, *Sleepy nightshade*. South of Europe. East Indies.

Root hypnotic, milder than opium; fruit very diuretic; decoction of the herb used in toothache. (G.) This plant is thought to have been the Στρυχνος ὑπνωτικος of Dioscorides; it is reputed to be narcotic, diuretic, and alexipharmic; the leaves, steeped in oil, are in India

applied to inflammatory tumours, and they are used in a similar way in Egypt; Kunth recognised this plant in Egyptian mummies. (L.)

SOLANUM. (De Cand. Bot. Gal. 337. Endl. Gen. Pl. 665.)

SOLANUM BAHAMENSE. (Linn.) Bahama islands.

Its juice is administered in the West Indies, in cases of sore throat, in the form of a gargle. (G.)

SOLANUM CERNUUM. (Velloza.) Brazil.

A decoction of the flowers and leaves is a powerful sudorific, and is very serviceable in syphilis, inveterate gonorrhœa, and similar complaints. (L.)

SOLANUM CRISPUM. (Ruiz et Pav.) *Natre.* Chili.

Shrub very bitter; berry in infusion used in inflammatory fevers.

*SOLANUM DULCAMARA. (Linn.) (E. B. 365.) *S. lignosum, Dulcamara, Bitter sweet, Woody nightshade.*

Fl. purple. June, July. Climbing shrub. Hedges and thickets.

Twigs, *Dulcamara caules*, diuretic, depurative, in chronic eruptions, its taste being covered with milk; the form in which it has been used is chiefly that of decoction, two or three ounces of that of the London Pharmacopœia may be given thrice a-day. (G.) The root and young branches in the form of a decoction, much diluted with milk, have been recommended in scrofulous or glandular obstructions. (Smith.) The plant is a dangerous narcotic, and its gay tempting berries have occasionally caused serious accidents among children and others who have eaten them; in medicine the plant has been considered serviceable, both internally, and used as a wash in lepra, psoriasis, and other cutaneous disorders; it is diaphoretic, and is said to have been advantageously exhibited in asthma. (L.) Dulcamara has been thought serviceable in chronic pulmonary catarrhs, in rheumatic gouty complaints, in chronic skin diseases, in lepra, and in various cachectic conditions of the system, in which sarsaparilla has been found beneficial. (Pereira.)

SOLANUM INCANUM.

Leaves applied to cancers.

SOLANUM JACQUINI. (Willd.) East Indies.

Considered by the native practitioners as an expectorant. (L.)

SOLANUM LYCOPERSICUM. (Willd.) *Love apple, Tomatoes.* South America.

Berries used to make a sauce. (G.)

SOLANUM MAMMOSUM. (Linn.) West Indies.

Said to be bitter, and a valuable diuretic.

SOLANUM MELONGENA. (Willd.) *Melongena, Egg plant.*

Leaves narcotic; berries, *Mala insania, Mad apples*, boiled and eaten in the warmer climates. (G.) Cultivated both in Europe and the East and West Indies for its fruit, which is used boiled; stewed in sauces, &c., like that of the *Love apple.* (Loud.)

SOLANUM MURICATUM. (Willd.) Peru.

Fruit eatable.

*SOLANUM NIGRUM. (Linn.) (E. B. 566.) *S. vulgare, Black nightshade, Common nightshade.*

Fl. white. June, September. Annual. Waste places.

Leaves used externally as an anodyne in erysipelas; young shoots, *Bredes, Laman*, eaten as spinach; berries produce mania, somnambulism, and death. (G.) A grain or two of the dried leaf has sometimes been given to promote various secretions, possibly by exciting a great and rather dangerous agitation in the viscera. (Smith.) It is a narcotic, and, according to Orfila, its extract possesses nearly the same power as lettuce opium; in Brazil it is called *Carachicu*, or *Erva mora*, and when bruised is applied either in poultices or baths to painful wounds, and in generally inflammatory cases, with a predominant excitement of the nervous system. (L. ex Martius.)

SOLANUM OVIGERUM. (Dun.) *Oval egg plant.* Arabia.

Distinguished from the egg-like variety of S. melongena by its acrid pulp, which being removed by the scoop or pressure, the flesh is dressed and eaten. (L.) Said to be narcotic. (O'Sh.)

SOLANUM PANICULATUM. (Linn.) Brazil.

This plant is called *Juripeba* in Brazil, where the juice of its bruised leaves and unripe fruit is much esteemed as a powerful remedy in obstructions of the bowels, especially of the liver, and in catarrhus vesicæ; several other kinds of Solanum are used in similar diseases; when applied fresh they generally act very favourably in cleansing and healing wounds and ulcers. (L. ex Martius.)

SOLANUM PSEUDO CAPSICUM. (Willd.) *Amomum Plinii, Tree nightshade, Winter cherry.* Madeira.

Fruit anodyne.

**SOLANUM TUBEROSUM. (Willd.) *Potato.*

Fl. purple or white. June, September. Perennial. Native of America.

Tubers of the root, *Potatoes, Batatas*, appear to yield a vast quantity of food upon a small extent of ground and with little labour, but only one-seventh part of the weight is nutritious, the remainder is an acrid, poisonous juice. When it first began to be used, it was supposed to be narcotic, diuretic, and aphrodisiac. *Salep powder*, or *French salep*, consists of potatoes peeled, cut in slices, baked until brittle, horn-like, and breaking like glass, then ground to a whitish powder. (G.) There is no root hitherto discovered so well adapted for universal use as the tubers of the potato, for having no peculiarity of taste, and consisting chiefly of starch, their farina is nearly the same as that of grain; hence, with the flour of the potato, puddings, and such preparations as do not call the gluten of wheat flour into action, may be made equal to those of millet or rice, and excellent bread, with a moderate proportion of good wheat flour. Potato starch, independently of its use in the laundry, and as a hair powder, is considered an equally delicate food as sago or arrowroot. As starch and sugar are so nearly the same that the former is easily converted into the latter, the potato yields a spirit equal to that of malt by distillation, and a wine

or beer by the fermentative process. (Loud.) Many other species and varieties of this genus produce edible fruits or farinaceous tubers, and some of them saponaceous berries.

SOLANUM VESPERTILIO.

Berries deep lake-red, used to colour the cheeks. (G.) A spinose species of Solanum, called *Burabara*, is reputed in Demerara to be an antidote to the bite of the rattlesnake. (L.)

ORDER 107.—SCROPHULARINEÆ. (Endl. Gen. Pl. 670. Lindl. Nat. Ord. 288.) ANTIRRHINEÆ. (De Cand. Bot. Gal. 342.)

Calyx free, five, or more generally (by abortion) four parted; *sepals* more or less united, sometimes free, unequal, the upper one largest, the lateral ones smallest, imbricated in æstivation; *corolla* gamosepalous, five-cleft, or (by the cohesion of the two upper petals to the apex) four-cleft, the tube short or elongated, limb expanded or erect, sub-equally partite or bilabiate, imbricated in æstivation; *stamens* simple, opposite the sepals, upper stamens entirely wanting or sterile, very rarely fertile, shorter than the others, the two lateral equal, rarely abortive, the two lower equal to, or longer than, the lateral ones, sometimes wanting; *anthers* two or one-celled, dehiscing longitudinally; *ovary* free, two-celled, cells two, or many-seeded; *style* simple, rarely slightly bifid; *stigma* generally simple, entire, emarginate, or bifid; *fruit* capsular, rarely baccate, two-celled, two-seeded, dehiscing by valves or pores; *dissepiment* parallel, or opposite to the valves, becoming loose in the centre, or altogether free; *placenta* adhering to the dissepiments, sometimes separating when ripe; *seeds* generally indefinite; *embryo* variously placed in the albumen. *Herbs*, *under-shrubs*, or sometimes *shrubs*, usually inodorous, but sometimes fœtid, rarely aromatic; *leaves* opposite, whorled, or alternate; *flowers* axillary or racemose, rarely spiked; *peduncles* opposite or alternate, sometimes simple and one-flowered, sometimes many-flowered, in dichotomous cymes.

In the second edition of the Bot. Gal. of De Cand. and Duby, this order is divided between the Antirrhineæ, p. 342, and Rhinanthaceæ, p. 351, but this is not generally followed. See Lind. Nat. Ord. 289.

ANTIRRHINUM. (De Cand. Bot. Gal. 343. Endl. Gen. Pl. 673.)

*ANTIRRHINUM MAJUS. (Willd.) (E. B. 129.) *Great snap-dragon.*

Fl. purplish-red. July, August. Perennial. Walls and chalk cliffs.

An hysteric, and used externally in ophthalmia.

*ANTIRRHINUM ORONTIUM. (Willd.) (E. B. 1155.) *Orontium arvense*, *Calves snout*, *Lesser snap dragon.*

Fl. purple. July, August. Perennial. Corn fields in the east and south of England.

Herb poisonous.

CALCEOLARIA. (Endl. Gen. Pl. 671.)

CALCEOLARIA PINNATA. (Linn.) Peru.

Leaves said to be purgative and emetic. (L.)

CALCEOLARIA TRIFIDA. (Fl. Peruv.) *Tumpu.* Peru.

Leaves said to be tonic and febrifuge. (L.)

CAPRARIA. (Endl. Gen. Pl. 679.)

CAPRARIA BIFOLIA. (Willd.) *Shrubby goatweed.* Tropical America.

Flowers used instead of tea.

DICEROS. (Endl. Gen. Pl. 695.)

DICEROS COCHINCHINENSIS. (Lour.) Cochin China.
Eaten in salads.

DIGITALIS. (Endl. Gen. Pl. 678.) (De Cand. Bot. Gal. 342.)

*DIGITALIS PURPUREA. (Linn.) (E. B. 357.) *Digitalis, Foxglove.*

Fl. purple, sometimes white. July, August. Biennial. Dry banks.

Leaves, *Digitalis folia*, used externally as vulnerary and antiscrofulous, and internally in doses of gr. ss. to gr. ij. as a sedative, and particularly as a diuretic, but great caution is required in using it, because it accumulates in the system; and the practitioner may be surprised at the sudden demise of his patient, even after he has left off its use. Seeds, *digitalis semina*, used for the same purpose, less uncertain. (G.) The leaves and seeds of this plant, especially the former, in the state of powder, tincture, or infusion, afford one of the most valuable of known medicines for the purpose of reducing the action of the heart, promoting the action of the absorbents, as a diuretic, and for producing a specific action over the cerebro-spinal system; it is employed very extensively in fevers, dropsy, inflammation, hæmorrhages, diseases of the heart, and in mania, epilepsy, spasmodic asthma, and the like; it is very remarkable for its power on the system, sometimes accumulating, till it suddenly shows itself with irresistible force, to the imminent risk of the life of the patient. (L.) The leaves should be gathered when the plant is in flower, and those only which are fresh selected; the leaf stalks and mid-rib should be rejected, and the remaining part be dried either in the sunshine, or on a tin pan or pewter dish before the fire, or the plant be hung up, each leaf separate, in a warm kitchen; practitioners ought always to obtain a supply of the recent leaves in the month of July, and dry them themselves, as in the herb shops they are often so ill dried as to appear black, in which state they are useless; the powder should be kept in closely-stopped opaque phials. (Loud.) Both the dried leaves and powder should be preserved in well-stopped bottles covered externally by dark-coloured paper, and kept in a dark cupboard; as keeping considerably diminishes their medicinal activity, they should be renewed annually. (Pereira.)

DIGITALIS LUTEA. (Linn.) *D. parviflora.* (All.) *D. micrantha.* (Roth.) *Yellow foxglove.* France.

May be used as the last.

EUPHRASIA. (De Cand. Bot. Gal. 354. Endl. Gen. Pl. 693.)

*EUPHRASIA OFFICINALIS. (Linn.) (E. B. 1416.) *Euphrazia, Eyebright.*

Fl. white, streaked with purple. July, August. Annual. Pastures, common.

Cephalic, ophthalmic. (G.) Slightly bitter and aromatic; it has had much reputation in diseases of the eye, but has generally fallen into disrepute; it has, however, lately been asserted by Professor Kranichfeld, that it is particularly useful in catarrhal inflammation of the eyes; he has also found it beneficial in cough, hoarseness, earache,

and headache, which have supervened in catarrhal affections. (L. ex. Med. Gaz. xx. 528.) Lightfoot states, that the Scotch Highlanders make an infusion of it in milk, and anoint the patient's eyes with a feather dipped in it. (Loud.)

GRATIOLA. (Endl. Gen. Pl. 682.)

GRATIOLA OFFICINALIS. (Linn.) *Gratiola, Hedge hyssop.* Marshes of Europe.

Very acrid, drastic, vermifuge, used also in dropsy and jaundice; dose gr. v. to ℈jss., beginning with a small one; inspissated juice, gr. xx. to xxx., is purgative and diuretic. (G.) A very active plant, formerly called *Gratia Dei*, on account of its efficiency as a medicine; it is extremely bitter, acts violently both as a purgative and an emetic, and has been said to be the basis of the famous gout medicine called *Eau medicinale*, which, as its active principle appears to be of the nature of Veratria, is not improbable; *Gratiola* is said to have been found serviceable in cases of hypochondriasis; in over doses it is a violent poison, and, according to Haller, it renders by its abundance some of the Swiss meadows useless as pastures. (L.)

G. PERUVIANA (Linn.) has purgative and emetic leaves and roots. (L.)

HEMIMERIS. (Endl. Gen. Pl. 672.)

HEMIMERIS CAULIALATA. (Pers.) *Alonsoa caulialata.*

Stomachic, anodyne.

HERPESTES. (Endl. Gen. Pl. 681.)

HERPESTES MONNIERA. (H. B. et Kunth.) *Gratiola monniera,* (Linn.) *Monniera Brownii,* (Pers.) Tropical parts of the world.

The natives of India use the expressed juice mixed with petroleum, to rub on parts affected with rheumatic pains. (L.)

HERPESTES? AMARA. *Gratiola amara.* Moluccas.

Leaves excessively bitter, and might no doubt answer valuable purposes in medicine. (L. ex Roxb.)

LINARIA. (De Cand. Bot. Gal. 343. Endl. Gen. Pl. 673.)

*LINARIA CYMBALARIA. (Mill.) (E. B. 502.) *Antirrhinum cymbalaria.* (Linn.) *Cymbalaria, Ivy leaved toad flax.*

Fl. pale blue or purplish. May, September. Perennial. On old walls.

Has a warm, cress-like flavour, and has been recommended as an antiscorbutic. Hamilton says that in India it is given with sugar in cure of diabetes, and from the report of its influence over that disorder, it well deserves to be tried by the English practitioner; it is, however, probable that Dr. Hamilton's remarks do not apply to this plant, which does not grow in India, but to *L. ramosissima,* (Wall.) a nearly-allied species. (L.)

*LINARIA ELATINE. (Desf.) (E. B. 692.) *Antirrhinum elatine.* (Linn.) *Elatine, Veronica fœmina, Female speedwell, Fluellin, Sharp pointed fluellin,* or *Toad flax.*

Fl. yellow, upper lip violet. July, September. Annual. Corn fields on chalky or sandy soil.

Said to be bitter and purgative. (L.)

*LINARIA MINOR. (H. K.) (E. B. 2014.) *Antirrhinum minor*, *Lesser toad flax*, *Small toad flax.*

Fl. purplish-yellow. June, August. Annual. Chalky and sandy fields in the south of England.

These three are all anticancerous, especially *L. elatine*, the juice of which is used in foul ulcers and cutaneous eruptions. (G.)

*LINARIA VULGARIS. (Mönch.) (E. B. 658.) *Antirrhinum linaria.* (Linn.) *Linaria*, *Toad flax*, *Yellow toad flax.*

Fl. yellow. July, August. Perennial. Hedges and borders of fields.

Deobstruent, diuretic. (G.) Reported to be purgative and diuretic; it is bitter; its flowers have been recommended, in decoction, as a wash for chronic diseases of the skin, and that it would not be an inactive lotion seems probable from the fact, that in London the plant is occasionally boiled in milk for the purpose of destroying flies. (L. ex Burnett.)

MELAMPYRUM. (De Cand. Bot. Gal. 351. Endl. Gen. Pl. 694.)

*MELAMPYRUM ARVENSE. (Linn.) (E. B. 53.) *Triticum vaccinum*, *Purple cow wheat.*

Fl. variegated with yellow, purple, rose-colour, and green. July. Annual. Corn fields and dry banks in Norfolk.

*MELAMPYRUM PRATENSE. (Linn.) (E. B. 113.) *Cratægonum*, *Common yellow cow wheat*, *Wild cow wheat.*

Fl. pale yellow. June, August. Annual. Groves and thickets.

Seeds aphrodisiac; herb fattens cows.

PEDICULARIS. (De Cand. Bot. Gal. 352. Endl. Gen. Pl. 694.)

*PEDICULARIS PALUSTRIS. (Linn.) (E. B. 399.) *Louse wort*, *Marsh louse wort*, *Red rattle.*

Fl. deep rose-colour. June, July. Annual. Wet and marshy places.

Nauseous, acrid; its juice, or a decoction, used externally in old ulcers; kills lice, yet said to breed lice in cattle that feed on it.

PICRORHIZA. (Endl. Gen. Pl. 689.)

PICRORHIZA KURROA. (Royle.) East Indies.

Root intensely bitter; used in the native medicine of India. (L.)

RHINANTHUS. (De Cand. Bot. Gal. 353. Endl. Gen. Pl. 694.)

RHINANTHUS CRISTA GALLI. (Willd.) (E. B. 657.) *Christa Galli*, *Cock's comb*, *Common yellow rattle.*

Fl. yellow, tipped with purple. June. Annual. Meadows and pastures.

Is used to kill lice.

SCOPARIA. (Endl. Gen. Pl. 687.)

SCOPARIA DULCIS. (Linn.) *S. ternata.* (Forsk.) *S. procumbens.* (Jacq.) Spanish America.

An infusion is used by the Indians of Spanish America to cure agues, according to Humboldt; Martius, however, states that in Brazil, where it is called *Basourinha* or *Vacourinha*, the expressed juice is merely mucilaginous, and employed as a cooling laxative. (L.)

SCROPHULARIA. (De Cand. Bot. Gal. 346. Endl. Gen. Pl. 671.)

*SCROPHULARIA AQUATICA. (Linn.) (E. B. 854.) *Betonica aquatica, Water betony, Water figwort.*

Fl. dark purple at the mouth. July. Perennial. Wet places.

Properties the same as in *S. nodosa;* Burnett, however, says that they cannot be very unwholesome plants, because the garrison of Rochelle, during the celebrated siege by Cardinal Richelieu, in 1628, supported themselves in their extremity by eating the roots of S. aquatica, which has since that time been called by the French, *Herbe du siége.* (L.)

*SCROPHULARIA NODOSA. (Linn.) (E. B. 1544.) *Knotted figwort.*

Fl. greenish-purple. July. Perennial. Moist ground and woods.

Leaves and roots said to be purgative and emetic; they have a bitter taste, and a heavy, disagreeable smell; a decoction of the leaves is used by farmers to cure the scab in swine. (L. ex Burnett.) Diuretic and narcotic. (Pereira.) Both of these are incisive, attenuating, used in scrofula and cancer. (G.)

TORENIA. (Endl. Gen. Pl. 684.)

TORENIA ASIATICA. (Linn.) East Indies.

Juice of the leaves considered on the Malabar coast a cure for gonorrhœa. (L.)

VANDELLIA. (Endl. Gen. Pl. 683.)

VANDELLIA DIFFUSA. (Linn.) Guayana, Brazil, Isle of France.

Of great value in Guayana as an antibilious emetic and febrifuge, and a most efficacious remedy in malignant fevers and dysentery, especially in cases depending on a disordered state of the liver. (Hancock in Med. Bot. Trans., 1829, p. 9.) It is called *Haimarada* by the Arowak Indians, and *Bitter blain* by the Dutch creoles. (L.)

VERBASCUM. (De Cand. Bot. Gal. (*Solaneæ*) 339. Endl. Gen. Pl. 670.)

*VERBASCUM BLATTARIA. (Linn.) (E. B. 393.) *Blattaria, yellow moth mullein.*

Fl. July. Annual. Banks on a gravelly soil.

Has the same qualities as *V. thapsus;* attracts moths; seeds inebriate fish. (G.) Is said to have the power of driving away the blatta, or cockroach. (Loud.)

*VERBASCUM LYCHNITIS. (Linn.) (E. B. 58.) *V. album, white flowered mullein, White mullein.*

Fl. cream-coloured. July, August. Biennial. Road-sides and pastures, especially on the chalk.

Leaves pulmonary. (G.) Used in many places as a poison for mice. (L.)

VERRASCUM NIGRUM. (Linn.) (E. B. 59.) *Black mullein, Dark mullein.*

Fl. yellow. July, August. Perennial. Banks and way-sides.

Root astringent; leaves and flowers anodyne and pectoral. (G.) Accounted slightly narcotic; the seeds of this, and of the next species, are said to be used by poachers to poison fish. (L.)

*Verbascum Thapsus. (Linn.) (E. B. 549.) *Verbascum, Thapsus barbatus, Cow's lung wort, Great mullein, High taper.*

Fl. yellow. July, August. Biennial. Banks and waste ground on a sandy or chalky soil.

Anodyne and pectoral; the down has been used as moxa for the actual cautery; a decoction of the leaves given in diarrhœa. (G.) The down of several species of Verbascum may be used as tinder, and to make wicks for lamps, whence the name Lychnitis applied to one of the species, from λυχνος, a lamp. (Loud.) Used to poison fish. (O'Sh.) Emollient, demulcent, and supposed to be feebly narcotic. (Pereira.)

Veronica. (De Cand. Bot. Gal. 355. Endl. Gen. Pl. 688.)

*Veronica arvensis. (Linn.) (E. B. 734.) *V. acinacifolia.* (Willd.) *Speedwell chickweed, Wall speedwell.*

Fl. blue. May, July. Annual. Fields and walls. Common.

Vulnerary, incisive, diaphoretic, antiphthisic.

*Veronica Beccabunga. (Linn.) (E. B. 635.) *Anagallis aquatica, Beccabunga, Brooklime.*

Fl. blue. May, September. Perennial. Watercourses. Common.

Leaves, when fresh, diuretic, antiscorbutic; eaten as salad; juice in a full dose an easy purge. (G.)

*Veronica Chamædrys. (Linn.) (E. B. 623). *Chamædrys sylvestris, Germander speedwell, Wild germander.*

Fl. blue. May, June. Perennial. Woods, pastures, and hedge banks.

Leaves a better substitute for tea than those of *V. officinalis.*

*Veronica montana. (Linn.) (E. B. 766.) *Mountain madwort, Mountain speedwell.*

Fl. blue. May, June. Perennial. Moist woods.

Properties the same as those of *V. arvensis.*

*Veronica officinalis. (Linn.) (E. B. 765.) *Betonica Pauli, Veronica mas, Common speedwell, Fluellin.*

Fl. blue. May, July. Perennial. Woods and dry pastures.

Leaves slightly astringent, bitter; substituted for tea, but more astringent, and less grateful.

*Veronica spicata. (Linn.) (E. B. 2.) *Smallest fluellin, Spiked speedwell.*

Fl. blue. July, August. Perennial. Newmarket, Bury, Lancashire, and Wales. Rare.

Properties similar to those of *V. arvensis.*

Veronica Virginica. (Linn.) *Leptandra Virginica.* (Nutt.) *Virginia speedwell, Culver's physic.* Virginia.

Root, *Veronica, P. U. S.*, astringent.

Order 108.—OROBANCHEÆ. (De Cand. Bot. Gal. 348. Endl. Gen. Pl. 725.)

Calyx divided, persistent, inferior; *corolla* monopetalous, hypogynous, irregular, persistent, with an imbricated æstivation; *stamens* four; generally didynamous, inserted into the tube of the corolla, and alternate with its segments; *anthers* two-celled, cells

distinct, parallel, often mucronate, or bearded at the base; *ovary* superior, one-celled, seated in a fleshy disk, with two or four parietal polyspermous placentæ; *style* one; *stigma* two-lobed; *fruit* capsular, enclosed within the withered corolla, one-celled, two-valved, each valve bearing one or two placentæ in the middle; *seeds* indefinite, very minute; *embryo* minute, inverted at the apex of a fleshy albumen. Herbaceous leafless *plants*, growing parasitically upon the roots of other species; *stems* covered with brown or colourless scales.

EPIPHEGUS. (Endl. Gen. Pl. 726.)

EPIPHEGUS VIRGINIANA. (Nutt.) *Orobanche virginiana.* (Linn.) South of United States.

Michaux says that in Virginia the powdered stems are frequently sprinkled over inveterate ulcers and open cancers with considerable benefit; a quack medicine, known in North America by the name of *Martin's Cancer Powder*, is said to be a compound of this plant and white arsenic. (L.)

LATHRÆA. (De Cand. Bot. Gal. 351. Endl. Gen. Pl. 727.)

*LATHRÆA SQUAMARIA. (Linn.) (E. B. 50.) *Squamaria, Tooth wort.*

Fl. purplish. April, May. Perennial. On the roots of trees.

Herb consolidating, astringent, used in hernia and wounds.

OROBANCHE. (De Cand. Bot. Gal. 348. Endl. Gen. Pl. 727.)

*OROBANCHE MAJOR. (Linn.) (E. B. 421.) *Orobanche, Broom rape.*

Flowers and whole plant dingy purplish-brown. June, July. Perennial. On roots of broom and furze.

Herb in powder gives relief in the colic; used in hypochondriasis; externally resolvent.

ORDER 109.—GESNERACEÆ. (Endl. Gen. Pl. 715. Lindl. Nat. Ord. 286.)

Calyx half superior, five-parted, with a valvate æstivation; *corolla* monopetalous, tubular, more or less irregular, five-lobed, with an imbricate æstivation; *stamens* two, or didynamous; *anthers* cohering, two-celled, innate, with a thick tumid connective; the rudiment of a fifth stamen is present; *ovary* half superior, one-celled, with two fleshy, two-lobed, parietal, polyspermous placentæ, surrounded at its base by glands alternating with stamens; *style* continuous with the ovary; *stigma* capitate, concave; *fruit* capsular, or succulent, half superior, one-celled, two-valved, with loculicidal dehiscence, and two opposite lateral placentæ, each consisting of two plates; *seeds* very numerous, minute; *embryo* erect, in the axis of fleshy albumen; *testa* thin, with very close fine oblique veins. Herbaceous *plants*, or *under-shrubs*; *leaves* opposite, rugose without stipules; *flowers* showy, in racemes or panicles, rarely solitary. (Lindl.)

BESLERIA. (Endl. Gen. Pl. 720.)

BESLERIA VIOLACEA. Tropical America.

Berry eatable.

PICRIA. (Endl. Gen. Pl. 719.)

PICRIA FELTERRÆ. China.

Intensely bitter.

Order 110.—LABIATÆ. (De Cand. Bot. Gal. 359. Endl. Gen. Pl. 607.)

Calyx inferior, persistent, gamosepalous, generally regular, either five-dentate, with the fifth tooth superior and next the axis, or ten-dentate, sometimes irregular, oblique, incurved; *corolla* gamopetalous, hypogynous, deciduous, irregular, the tube polymorphous, the limb 4—5 lobed, subcampanulate, bisubiate, or oblique, imbricated in æstivation; *stamens* four, generally didynamous, inserted into the tube of the corolla, and mostly fertile, the two upper sometimes sessile, generally fertile; *normal anthers* two-celled, the cells united by a connective, parallel, or diverging, or divaricate at the base, being continuous at the apex, sometimes one cell is abortive, the anther being then dimidiate; connective sometimes elongated, separating the anther cells to some distance; often imperceptible, the cells being then confluent; *ovary* four-lobed, the lobes one-ovuled, ovule erect; *style* one, inserted between the lobes at their base, bifid; *stigmas* two, terminal, or sub-terminal, generally extremely small; *fruit* generally consisting of four achenes (or fewer by abortion), persistent in the bottom of the calyx, the pericarp membraneous, thickened, or fleshy; *seeds* erect; *albumen* none; *embryo* erect, deeply cleft: *cotyledons* straight, or recurved at the apex; *radicle* straight, or slightly curved. *Herbaceous plants*, or *under-shrubs*; *stem* four-cornered, with opposite ramifications; *leaves* opposite, divided, or undivided, exstipulate, replete with receptacles of aromatic oil; *flowers* in opposite, nearly sessile, axillary cymes, resembling whorls; sometimes solitary, as if capitate.

Ajuga. (De Cand. Bot. Gal. 361. Endl. Gen. Pl. 632.)

*Ajuga Chamæpitys. (Schreb.) (E. B. 77.) *Chamæpitys, Iva arthritica, Teucrium chamæpitys, Ground pine, Yellow bugle.*

Fl. yellow. May, June. Annual. Chalky or gravelly fields.

Bitter, tonic, febrifuge.

*Ajuga pyramidalis. (Linn.) (E. B. 1270.) *Mountain bugle, Pyramidal bugle.*

Fl. blue. June. Perennial. Highland pastures.

*Ajuga reptans. (Linn.) (E. B. 489.) *Bugula, Common bugle.*

Fl. blue, sometimes white. May, June. Perennial. Moist pastures and woods.

Bitter, astringent, nearly inodorous, sometimes substituted for bark.

Amaracus. (Endl. Gen. Pl. 617.)

Amaracus Dictamnus. (Benth.) *Dictamnus Creticus, Origanum dictamnus.* (Linn.) *Dittany of Crete.* Rocks of Candia.

Aromatic and tonic; once in much repute among the Greeks and Romans, but now not much used. (L.)

Anisomeles. (Endl. Gen. Pl. 625.)

Anisomeles malabarica. (Brown.) *Ajuga fruticosa*, (Roxb.) *Nepeta Malabarica*, (Linn.) East Indies and Isle of France.

Patients suffering from ague are made to inhale the vapour arising from an infusion of this plant, copious perspiration ensues, which is kept up for some time by drinking more of the infusion. (Wight.) The leaves, which are bitter and astringent, are taken in India to assist digestion, and to impart tone to the stomach. (L.) The entire plant deemed emmenagogue in the West Indies. (O'Sh.)

Ballota. (De Cand. Bot. Gal. 365. Endl. Gen. Pl. 657.)

*Ballota nigra. (Willd.) (E. B. 46.) *Marrubium nigrum, Black horehound.*

Fl. purple. July, August. Perennial. Waste places. Common.

BALLOTA SUAVEOLENS. *Jamaica spikenard.*

Strong-scented, emmenagogue, antihysteric, antiepileptic, expectorant, and vermifuge; externally they are vulnerary; an infusion of the latter used in dropsy and gravel. (G.)

COLLINSONIA. (Endl. Gen. Pl. 618.)

COLLINSONIA CANADENSIS. (Willd.) *C. præcox? Canadian snakeroot, horse-weed, horse-balm, richweed, heal-all, stone-root, knot-root.* (W. and B. 1248.) North America.

Root used for Virginian snakeroot.

CUNILA. (Endl. Gen. Pl. 618.)

CUNILA MARIANA. (Linn.) *Zizophora mariana, Virginia pennyroyal.* North America.

Leaves, *Cunila, P. U. S.*, diaphoretic, distilled for their oil. (G.) Employed beneficially in slight fevers and colds, with a view to excite perspiration. (L.)

DRACOCEPHALUM. (Endl. Gen. Pl. 623.)

DRACOCEPHALUM MOLDAVICA. (Willd.) *Moldavian mint.* Moldavia.

Similar in quality to mint.

DYSOPHYLLA. (Endl. Gen. Pl. 612.)

DYSOPHYLLA AURICULARIA. (Blum.) *Mentha villosa, Auricularia, Ceylonian plant, Earwort, Marlow.* East Indies.

Used for deafness. (G.) Has been recommended as a stimulating application in the cure of deafness. (L.)

GALEOPSIS. (Endl. Gen. Pl. 625.)

*GALEOPSIS LADANUM. (Willd.) (E. B. 884.) *Narrow-leaf all-heal, Red hemp nettle.*

Fl. purplish, rose-coloured, or white. August. Annual. Corn-fields.

*GALEOPSIS OCHROLEUCA. (Lamb.) (E. B. 2353.) *Trailing hemp nettle.*

Fl. large, pale yellow. July, August. Annual. Sandy corn-fields.

Well spoken of as an expectorant, and in phthisical complaints.

*GALEOPSIS TETRAHIT. (Willd.) (E. B. 207 and 667.) *Bastard hemp, Common hemp nettle.*

Fl. purplish or white. August. Annual. Corn-fields and waste places.

Seeds yield oil. (G.) These have also the same properties as Ballota nigra.

GENIOSPORUM. (Endl. Gen. Pl. 608.)

GENIOSPORUM PROSTRATUM. (Benth.) East Indies.

Used at Pondicherry as a febrifuge (L.)

HEDEOMA. (Endl. Gen. Pl. 618.)

HEDEOMA PULEGIOIDES. (Pers.) *Cunila pulegioides.* (Linn.) *Melissa p.*, (Linn.) *Ziziphora pulegioides*, (R. and S.) *American pennyroyal.* North America.

This plant has great reputation in North America as an emmenagogue, where it is called pennyroyal. (L.)

HYSSOPUS. (Endl. Gen. Pl. 617. De Cand. Bot. Gal. 363.)

**HYSSOPUS OFFICINALIS. (Linn.) *Hyssopus, H. angustifolius.* (Bieb.) *H. orientalis.* (Willd.) *Hyssop.*

Fl. purple. July, August. Perennial. Native of the south of Europe and centre of Asia.

Leaves emmenagogue, pectoral, used as tea; soaked in water or wine, and applied as a cataplasm, used as a discutient for black eyes and other contusions. (G.) A stimulating stomachic, considered serviceable in hysterical complaints and in relieving flatulence. (L.)

LAMIUM. (Endl. Gen. Pl. 624. De Cand. Bot. Gal. 366.)

*LAMIUM VULGATUM. (Benth.) *Common dead nettle.*

Var. β. ALBUM. (Willd.) (E. B. 768.) *Urtica mortua, White archangel.*

Fl. white. June, July. Perennial. Ditches and waste places.

*LAMIUM PURPUREUM (Linn.) (E. B. 1933.) *Red archangel, Red dead nettle.*

Pl. purple. May, September. Annual. Waste ground.

LAMIUM ORVALA. (Willd.) *Purple archangel.* Italy.

Heating and strengthening, made into tea with honey they are diaphoretic, discutient, and expectorant. (G.) Leaves of L. orvala eaten in Sweden as a pot-herb in spring, according to Linnæus. (Loud.)

*LAMIUM GALEOBDOLON. (Crantz.) (E. B. 787.) *Galeobdolon luteum*, (Hook.) *Galeopsis galeobdolon*, (Linn.) *Lamium luteum, Yellow archangel*, or *Weasel snout.*

Fl. yellow. May, June. Perennial. Woods and shady places.

Properties the same as Ballota nigra.

LAMIUM MACULATUM. (Willd.) *Milzadella, Urtica lactea, Spotted archangel.* Italy.

Herb esteemed specific in scrofula and fluor albus.

LAVANDULA. (De Cand. Bot. Gal. 369. Endl. Gen. Pl. 611.)

LAVANDULA SPICA. (D. C.) *L. latifolia.* (Vill.) *Spica vulgaris, Spike lavender, French lavender.* South of Europe.

Not employed medicinally, but yields what is called *Oil of Spike*, which is used by painters on porcelain, and in the preparation of varnishes for artists. (L.)

LAVANDULA STÆCHAS (Linn.) *Stœchas arabica, French lavender.* South of Europe, Asia, and Africa.

Has long been employed medicinally by the Arabs, who consider it as a valuable expectorant and antispasmodic. (L.) Also diuretic. (G.)

**LAVANDULA VERA. (D. C.) *L. angustifolia.* (Mönch.) *L. officinalis.* (Vill.) *L. spica.* (Linn.) *Common lavender.*

Fl. purplish grey. July. Small shrub. Native of the south of Europe.

Flowering tops, *Lavandulæ flores*, very odoriferous, yield essential oil; are nervine, antispasmodic, and cephalic. (G.) The spikes of flowers contain a fragrant volatile oil in great abundance, together with a bitter principle; they are carminative, stimulant, and tonic, but are

more employed in perfumery than in medicine; leaves and flowers have been used as sternutatories; *Oil of lavender* is obtained by distillation, and is sometimes given in hysteria and nervous headache; *Spirit of lavender* is prepared by distilling lavender flowers with rectified spirit, a sufficient quantity of water being added to prevent empyreuma; lavender enters into the composition of *Eau de Cologne* and the *Vinaigre aux quatre voleurs.* (L.)

LEONOTIS. (R. Br.) (Lind. Nat. Ord. 277.)

LEONOTIS NEPETIFOLIA. (Brown.) *Phlomis nepetifolia.* (Linn.) East Indies, South America.

Called *Cordão de frade* in Brazil; used in that country in baths as a remedy in rheumatic complaints. (L.)

LEONURUS. (De Cand. Bot. Gal. 394. Endl. Gen. Pl. 625.)

*LEONURUS CARDIACA. (Linn.) (E. B. 286.) *Cardiaca, Mother wort.*

Fl. white, with a reddish tinge. August. Perennial. Hedges and waste places.

A stimulant, which has been much extolled by the Russians as a preservative against canine madness. (Burnett.) The reputed tonic powers of this herb, and its use in palpitations of the heart, or in that disease of the stomach called heartburn, are now little regarded. (L. ex Smith.)

LEONURUS MARRUBIASTRUM. (Willd.) *Bastard horehound.* Austria.

Properties of this and of the former like those of *Ballota nigra.* (G.)

LYCOPUS. (De Cand. Bot. Gal. 359. Endl. Gen. Pl. 613.)

*LYCOPUS EUROPÆUS. (Linn.) (E. B. 1105.) *Marrubium aquaticum, Water horehound, Gipsy wort.*

Fl. whitish, with purple dots. June, July. Perennial. Ditches and banks of rivers.

Qualities same as *Ballota nigra.*

LYCOPUS VIRGINICUS. *Bugle weed.* (W. and B. 436.)

MARRUBIUM. (De Cand. Bot. Gal. 364. Endl. Gen. Pl. 627.)

MARRUBIUM ALYSSUM. (Willd.) *Alyssum Galeni, Galen's madwort.* Spain.

MARRUBIUM PSEUDO-DICTAMNUS. (Willd.) *Bastard dittany.* Candia.

Properties the same as those of *Ballota nigra.*

*MARRUBIUM VULGARE. (Linn.) (E. B. 410.) *M. album, Marrubium, Prassium, Horehound, White horehound.*

Fl. white. August. Perennial. Waste places, especially on a chalky soil.

Pectoral, used in coughs and colds. (G.) The whole herb has a white or hoary aspect, and a very bitter, not unpleasantly aromatic, flavour; its extract is a popular remedy for coughs and asthmatic complaints. (Smith.) It has been recommended in chlorosis and hysteria as stimulating and tonic, and also in the treatment of intermittents; an infusion of the leaves has been found serviceable in chronic catarrh and

humoral asthma; made into syrup or confection, and candied with sugar, they form a popular remedy for slight coughs; the plant, although not much used professionally, appears to deserve more attention than it now receives. (L. ex Burnett.) In large doses laxative. (Pereira.)

MELISSA. (De Cand. Bot. Gal. 374. Endl. Gen. Pl. 619.)

*MELISSA ACINOS. (Benth.) (E. B. 411.) *Acynos vulgaris.* (Hook.) *Thymus acynos, Basil thyme, Polymountain, Wild Basil.*

Fl. bluish purple. August. Annual. Cultivated fields on chalky or gravelly soils.

Properties similar to those of *Lamium album.*

*MELISSA CALAMINTHA. (Linn.) (E. B. 1676.) *Calamintha vulgaris, C. montana, Common calamint.*

Fl. whitish or pale purple. July, August. Perennial. Borders of fields and waysides on chalky or gravelly soils.

**MELISSA CLINOPODIUM. (Benth.) (E. B. 1401.) *Clinopodium vulgare.* (Linn.) *Ocymum sylvestre, Wild basil.*

Fl. rose purple. August. Perennial. Hills and dry bushy places.

Heating and strengthening; a tea made of this plant, mixed with honey, is diaphoretic, discussive, and expectorant.

MELISSA GRANDIFLORA. *Calamintha grandiflora, C. magniflora, Mountain calamint.* Italy.

*MELISSA NEPETA. (Linn.) (E. B. 284.) *Calamintha nepeta.* (Hook.) *C. odore pulegii, Thymus nepeta, Lesser calamint.*

Fl. whitish or pale purple. August. Perennial. Dry banks, on chalky soil.

**MELISSA OFFICINALIS. (Linn.) *Common balm, Melissa.*

Fl. whitish or cream-coloured. June, September. Perennial. Native of south of Europe.

Cephalic, used in nervous and hysteric cases. (G.) *M. calaminta* and *M. officinalis* are aromatic and slightly bitter, and are used by country people, in the form of tea, as a grateful fever drink. (L.) These plants are stomachic and diuretic, and were formerly prized as corroborants in hypochondriacal and nervous affections, but are now used only in the form of tea. (Lou.) Balm tea is sometimes employed as a diaphoretic in fevers, as an exhilarating drink in hypochondriasis, and as an emmenagogue in amenorrhœa and chlorosis. (Pereira.)

MELITTIS. (Endl. Gen. Pl. 623.)

*MELITTIS MELISSOPHYLLUM. (Linn.) (E. B. 636) *Melissa fuchsii, Bastard balm.*

Fl. white or reddish, lower lip often spotted with purple. May, June. Perennial. Woods and coppices in the south of England.

Diuretic, opening.

MERIANDRA. (Endl. Gen. Pl. 613.)

MERIANDRA BENGHALENSIS. (Benth.) *Salvia benghalensis.* (Roxb.) Bengal.

Leaves similar in smell and taste to those of *Salvia officinalis*, but much stronger; they are applied to the same uses. (L.)

MENTHA. (De Cand. Bot. Gal. 371. Endl. Gen. Pl. 613.)

*MENTHA AQUATICA. (Linn.) (E. B. 447.) *M. hirsuta, Sisymbrium sylvestre, Hairy mint, Water mint.*

Fl. purple. August, September. Perennial. Banks of rivers and marshes.

*MENTHA ARVENSIS. (Linn.) *Calamintha aquatica, Corn mint, Water calamint.*

Fl. pale purple. August. Perennial. Corn-fields. Common.

MENTHA CERVINA. (Linn.) *Pulegium cervinum, Hart's pennyroyal.*

*MENTHA CITRATA. (Ehr.) (E. B. 1025.) *Bergamot mint.*

Fl. purplish. August, September. Perennial. Watery places. Rare. Furnishes a fragrant oil, having very much the odour of bergamot. (L.)

MENTHA CRISPA. Var. *M. Aquatica. Curled leaved mint.*

MENTHA GENTILIS. Var. *M. arvensis. Bushy red mint.*

*MENTHA PIPERITA. (Huds.) (E. B. 687.) *M. glabrata.* (Vahl.) *M. piperissapore, Peppermint.*

Fl. purplish. August, September. Perennial. Watery places.

An aromatic stimulant, and the most pleasant of all the mints: employed in medicine for several purposes, principally to expel flatus, to cover the unpleasant taste of other medicines, and to relieve nausea and griping pains of the alimentary canal; the volatile oil is sometimes taken as an antispasmodic; it is what gives their flavour to peppermint lozenges. (L. ex Pereira.) Useful in the early stage of the malignant cholera. (O'Sh.)

*MENTHA PULEGIUM. (Linn.) (E. B. 1026.) *Pulegium, P. vulgare,* (Mill.) *Pennyroyal.*

Fl. purplish. June, September. Perennial. Wet commons.

The properties of this are analogous to those of other mints; the public fancy it to be possessed of specific emmenagogue, and antispasmodic qualities, an opinion formerly entertained of it by some medical practitioners; it is principally employed in obstructed menstruation, hysterical complaints, and hooping-cough. (L. ex Pereira.)

*MENTHA ROTUNDIFOLIA. (Linn.) (E. B. 446.) *Round-leaved horsemint.*

Fl. whitish. August, September. Perennial. Moist places on waste ground.

*MENTHA SYLVESTRIS. (Linn.) (E. B. 686.) *Menthastrum, Horse mint.*

Fl. purplish. August, September. Perennial. Moist waste ground.

All stomachic, promoting digestion, diuretic, and approved emmenagogues, either in powder or infusion; all yield oil by distillation. (G.)

*MENTHA VIRIDIS. (Linn.) (E. B. 2424.) *Spearmint.*

Fl. purplish. August. Perennial. Marshy places.

The herb has a strong, peculiar, and pleasant odour, with an aromatic, bitter taste, followed by a sense of coldness when air is drawn into the mouth; it is aromatic and carminative, and employed in flatulence, and to relieve the pain of colic; various preparations are

ordered by Pharmacopœias, of which *Oil of spearmint* and *Spearmint water* are the most common; the former is taken in doses of from two to five drops rubbed with sugar in a little water. (L.)

MONARDA. (Endl. Gen. Pl. 615.)

MONARDA FISTULOSA. (Linn.) North America.

Decidedly bitter as well as aromatic; has been employed in the United States as a febrifuge. (L.)

MONARDA KALMIANA. (Psh.) *Oswego tea.* North America.

Leaves used as those of tea.

MONARDA PUNCTATA. (Linn.) *Horsemint.* North America.

Root, *Monarda, P. U. S.*, emmenagogue. (G.) Abounds with camphor, and has been employed as an antispasmodic to relieve the nausea which attends the bilious fevers of America. (L.)

NEPETA. (De Cand. Bot. Gal. 369. Endl. Gen. Pl. 622.)

*NEPETA CATARIA. (Linn.) (E. B. 137.) *Mentha cataria, Nepeta, Cat mint, Catnep.*

Fl. white, tinged and spotted with pink. July, August. Perennial. Hedges and waste places.

Highly alluring to cats. Other properties like those of *Lamium album.* (G.) This plant, when bruised, appears to act as a real aphrodisiac upon cats. Its stimulating properties deserve to be examined. It is said to have been advantageously exhibited in amenorrhœa. (L.)

*NEPETA GLECHOMA. (Benth.) (E. B. 853.) *Glechoma hederacea,* (Linn.) *Hedera terrestris, Chamæcissus, Ground ivy.*

Fl. blue. May. Perennial. Hedges and waste places.

A favourite herb with country people for making a tea against pectoral and other complaints; it is said to have been serviceable in hypochondriacal complaints and monomania. (L. ex Burnett.) General properties same as the last. (G.) Before the use of hops, the leaves were put into ale, and being bitter, aromatic, and having a peculiar and very strong smell, were much used in popular medicine. (Lou.)

OCYMUM. (De Cand. Bot. Gal. 375. Endl. Gen. Pl. 608.)

OCYMUM ALBUM. *Toolsie tea.* India.

Leaves used as tea. (G.) Juice given to children in colds, to the extent of a tea-spoonful twice daily; dried leaves used as a substitute for tea. (O'Sh.)

**OCYMUM BASILICUM. (Linn.) *Basilicum, Sweet basil.*

Fl. light purple. June. Annual. Native of India.

Strong scented, emmenagogue; gave the peculiar flavour to the original Fetter-lane sausages. (G.) According to Ainslie, used in India to assuage the pains of childbirth, the pilose variety is employed. (L.)

OCYMUM CAVUM. (Sims.) South America.

Esteemed a sudorific in Brazil. The small seeds are deemed cooling and mucilaginous, and consequently are given in gonorrhœa, ardor urinæ, and affections of the kidneys. (O'Sh.)

OCYMUM CRISPUM. (Thunb.) Japan.

An infusion of the leaves is said by Thunberg to be used in Japan as a cure for rheumatism. (L.)

Ocymum hirsutum. India.
Whole plant slightly aromatic; prescribed by the Hindoos in decoction, in the bowel complaints of children. (O'Sh.)

Ocymum pilosum. India.
Seeds aromatic, used by women to relieve after-pains. (O'Sh.)

Ocymum sanctum. (Linn.) India.
Reported by Ainslie as a febrifuge. (L.)

Ocymum suave. (Willd.) India.
Used by the natives as a stomachic, and as a cure for infantile catarrh. (L.)

Ocymum tuberosum. *Java potatoes.* East Indies.
Tubers eaten.

Ocymum viride. (Willd.) Africa.
Employed in Sierra Leone as a febrifuge. (L.)

Origanum. (De Cand. Bot. Gal. 375. Endl. Gen. Pl. 617.)

Origanum heracleoticum. (Willd.) *Bastard marjoram.* South of Europe.

Origanum Majorana. (Willd.) *Amaracus, Sampscus, Majorana. Sweet marjoram.* Portugal.

Origanum onites. (Willd.) *Majorana oleracea, Pot marjoram.* Sicily.

*Origanum vulgare. (Linn.) (E. B. 1143.) *Origanum. Winter marjoram.*
Fl. purple. July, August. Perennial. Dry hills and bushy places.
General properties the same as *Lamium album.* (G.) *O. vulgare* yields what is called *Oil of thyme* in the shops, a common remedy for the pain of toothache in carious teeth; it is frequently used, mixed with olive oil, as a stimulating liniment against baldness, in rheumatic complaints, and against sprains and bruises. (L.) Tops dye purple. (G.) Dried leaves used as tea; oil used as a caustic by farriers. It also dyes linen a reddish-brown colour. (Lou.) Stimulant and carminative. The infusion has been administered in chronic cough, asthma, amenorrhœa. (Pereira.)

Phlomis. (De Cand. Bot. Gal. 364. Endl. Gen. Pl. 629.)

Phlomis Lychnitis. (Linn.) *Sage-leaf mullein.* South of Europe.
Properties like those of *Ballota nigra.*
One of the styptic plants, called *Matico*, is said by Martius to be a species of *Phlomis.*

Pogostemon. (De Cand. xii. 151.)

Pogostemon Patchouly. (Pellet.) *Pogostemon intermedias,* (Bentham.) *Pogostemon suavis,* (Tenore.) *Puchá Pát, Patchouly.*
Penang, and the Malayan peninsula. The tops of this plant (*summitates patchouli*) dried in the sun are imported into England. In the form of Sachets, it is supposed by some to preserve clothes from the attacks of insects; this, however, does not appear to be substantiated, at least as regards any specific power that it may possess. It is also used

as a stuffing for mattresses and pillows, and its leaves are considered to be preventitives against contagion, and are much used in perfumery. In India it is used by smokers mixed with tobacco.

PRUNELLA. (Endl. Gen. Pl. 620.)

*PRUNELLA VULGARIS. (Linn.) (E. B. 961.) *Prunella, Self-heal.*

Fl. violet-blue. July, August. Perennial. Moist and barren pastures.

Bitter, astringent, nearly inodorous, substituted for bark. (G.)

ROSMARINUS. (De Cand. Bot. Gal. 359. Endl. Gen. Pl. 615.)

**ROSMARINUS OFFICINALIS. (Linn.) *Rosmarinus, Rosemary.*

Fl. pale blue. May. Shrub. Native of the south of Europe.

Flowers, *Anthos rorismarini cacumina*, cephalic, nervine, cordial, heating, emmenagogue, used for strengthening; infusion promotes the growth of the hair, and gives it a healthy appearance. (G.) Leaves similar in smell and taste to those of *Salvia officinalis*, but much stronger; they are applied to the same uses. (L.) Carminative and mildly stimulant. Infusion of rosemary is sometimes used as a substitute for ordinary tea by hypochondriacal persons. The admired flavour of Narbonne honey depends on the bees collecting this substance from this plant. (Pereira.) The essential ingredient in the well-known *Eau de la reine d'Hongrie* is the essential oil of this plant, which is stated most positively to possess the power of encouraging the growth of hair and of curing baldness. It is the colouring ingredient of green pomatum. (O'Sh.)

SALVIA. (De Cand. Bot. Gal. 360. Endl. Gen. Pl. 614.)

SALVIA ÆTHIOPICA. *Ethiopian sage.*

SALVIA CRETICA. (Willd.) *Sage of Crete* Crete.

**SALVIA HORMINUM. (Linn.) *Horminum, Purple-topped clary.*

Fl. purple, bracts purple or red. July, August. Perennial. Native of the south of Europe.

Excite the nervous system, produce a slight intoxication; used in disorders of the eyes, and are aphrodisiac. (G.)

SALVIA GRANDIFLORA. (Ettl.) South of Europe.

Has the same properties as *S. officinalis*, but in a more concentrated degree. (L.) Preferred for making tea. (Lou.)

SALVIA INDICA. (Willd.) East Indies.

Herb put, in Hindostan, into the country beer to improve its flavour.

SALVIA LYRATA. (Willd.) *Cancer weed.* North America.

Root leaves bruised, used to destroy warts and in cancerous cases.

**SALVIA OFFICINALIS. (Linn.) *Common sage.*

Fl. purple, blue, or white. July, August. Small shrub. Native of the south of Europe.

Many varieties, differing in the size, form, and colour of the leaves, as *S. hortensis minor*, *S. virtutis*, *Sage of virtue*, *Small garden sage*; properties heating, sudorific; used in palsy, and trembling of the nerves; also cordial, stomachic; stops night sweats, and the flow of milk after weaning; *Galls*, *Baisonge*, eaten. (G.) *S. hortensis major*,

Great garden sage. A tea made of the leaves of these plants has the reputation of being a stomachic; their aromatic and bitter qualities render them fit to assist the stomach in digesting rich or greasy meats, on which account they are so much employed in cookery. (L.)

**SALVIA SCLAREA. (Linn.) *Clary, Sclarea.*

Fl. light blue, or whitish. July, August. Perennial. Native of the south of Europe.

Added to wine to give the flavour of Muscadel.

*SALVIA VERBENACA. (Linn.) (E. B. 154.) *Oculis christi, Wild clary.*

Fl. purple. July. Perennial. Banks and dry pastures.

SALVIA VERTICILLATA. (Willd.) *Hormium sylvestre, Wild clary.* Germany.

Seeds put in the eye become mucilaginous, and thus facilitate the extraction of anything that has got into it.

SATUREJA. (De Cand. Bot. Gal. 370. Endl. Gen. Pl. 617.)

SATUREJA CAPITATA. (Linn.) *Thymum verum, True thyme.* The Levant.

Vermifuge.

**SATUREJA HORTENSIS. (Linn.) *Summer savory.*

Fl. whitish. June, August. Annual. Native of the south of Europe.

More acrid and hotter than *Sweet basil*, dyes a yellow colour; employed for culinary purposes.

SATUREJA JULIANA. (Linn.) *S. spicata, Rock savory.*

Herb agrees with other savories.

SATUREJA MONTANA. (Linn.) *S. durior, S. frutescens, Winter savory.*

Used as spice.

SATUREJA THYMBRA. *Thymbra vera, True thymbra.*

Herb emmenagogue, used with honey in coughs.

SCUTELLARIA. (De Cand. Bot. Gal. 376. Endl. Gen. Pl. 620.)

*SCUTELLARIA GALERICULATA. (Linn.) (E. B. 523.) *Lysimachria galericulata, Common skull-cap, Hooded willow herb.*

Fl. blue, downy. July, August. Perennial. Banks of rivers.

Bitter, astringent, nearly inodorous; has been substituted for bark.

SCUTELLARIA LATERIFOLIA. (Linn.) North America.

Extolled in America as a remedy for hydrophobia, but upon no good grounds. (L.)

SIDERITIS. (De Cand. Bot. Gal. 368. Endl. Gen. Pl. 627.)

SIDERITIS HIRSUTA. (Willd.) *Sideritis, Ironwort.* South of Europe.

Herb cures wounds by the first intention.

SIDERITIS MONTANA. (Linn.) *Mountain ironwort.* Austria.

SIDERITIS SCORDIOIDES. (Linn.) *S. flore luteolo, German ironwort.* France.

Properties the same as those of *Scutellaria galericulata.*

SIDERITIS SYRIACA. (Willd.) *Stachys, Base horehound.* Levant.
Leaves acrid, emmenagogue, fœtid.

STACHYS. (De Cand. Bot. Gal. 367. Endl. Gen. Pl. 625.)

*STACHYS BETONICA. (Benth.) (E. B. 1142.) *Betonica officinalis.* (Linn.) *B. sylvestris, B. vulgaris, Wood betony.*
Fl. Purple. July, August. Perennial. Woods and thickets.
Heating and strengthening, made into a tea with honey, diaphoretic, discussive, expectorant. (G.) Intoxicates when fresh; leaves when dry excite sneezing; roots bitter and very nauseous, in a small dose they vomit and purge violently; the plant dyes wool of a very fine dark-yellow colour. (Lou.)

*STACHYS ARVENSIS. (Linn.) (E. B. 1154.) *Sideritis arvensis latifolia glabra, Smooth-leaved ironwort, Corn wound-wort.*
Fl. pale purple. July, August. Annual. Dry corn-fields.

*STACHYS PALUSTRIS. (Linn.) (E. B. 1675.) *Panax coloni, Clown's all-heal, Marsh wound-wort.*
Fl. rose purple. August. Perennial. Watery places. Common.

*STACHYS SYLVATICA. (Linn.) (E. B. 416.) *Hedge wound-wort, Stinking dead nettle.*
Fl. purple. July, August. Perennial. Woods and shady places.
Strong-scented, more or less disagreeable, emmenagogue, anti-hysteric, anti-epileptic, expectorant, vermifuge, externally vulnerary. (G.)

TEUCRIUM. (De Cand. Bot. Gal. 362. Endl. Gen. Pl. 631.)

TEUCRIUM BOTRYS. (Linn.) *Jagged germander.* South of Europe.
Used instead of hops.

TEUCRIUM CAPITATUM. (Linn.) *Polium montanum, Poly mountain.* Spain.
Alexiterial.

*TEUCRIUM CHAMÆDRYS. (Linn.) (E. B. 680.) *Chamædrys, Trissago, Creeping germander. Wall germander.*
Fl. reddish purple. July. Perennial. On walls and stony places.
Bitter tonic, febrifuge. (G.) Is said to have cured the Emperor Charles V. of the gout, by a vinous decoction taken for sixty successive days. (Lou.)

TEUCRIUM CRETICUM. *Polium creticum, Cretan poly mountain.*
Alexiterial.

TEUCRIUM FLAVUM. (Linn.) *Teucrium, Tree germander.* South of Europe.
Leaves used in diseases of the liver and spleen.

TEUCRIUM MARUM. (Linn.) *Marum Syriacum. Cat thyme, Syrian herb mastich.* Spain.
Emmenagogue; cats are very fond of it. (G.) Its active properties deserve investigation. (L.)

TEUCRIUM MONTANUM. (Schreb.) *Lavender-leaf poly.* South of Europe.
Alexiterial.

TEUCRIUM POLIUM. (Lamb.) *Polium montanum flavum, Yellow poly mountain.* South of Europe.

TEUCRIUM TEUTHRION. *Polium montanum album, White poly mountain.*

Leaves used in diseases of the liver and spleen.

*TEUCRIUM SCORDIUM. (Linn.) *Scordium germander, Water germander.*

Fl. pale purple. July, August. Perennial. Wet meadows. Rare.

*TEUCRIUM SCORODONIA. (Linn.) (E. B. 1543.) *Salvia agrestis, Scorodonia, Wild germander, Wood sage.*

Fl. yellowish white. July, August. Perennial. Woods and heaths.

Used instead of hops. (G.) Beer is said sooner to become clear than when hops are made use of; *T. scordium* was once in high esteem for destroying worms and for fomentations. (Lou.)

THYMBRA. (Endl. Gen. Pl. 620.)

THYMBRA SPICATA. (Willd.) *Mountain hyssop.* The Levant.

Vermifuge.

THYMUS. (De Cand. Bot. Gal. 372. Endl. Gen. Pl. 617.)

THYMUS MASTICHINA. (Willd.) *Marum, Herb mastich.* Spain.

*THYMUS SERPYLLUM. (Linn.) (E. B. 1514.) *Serpyllum, Lemon thyme, Mother of thyme, Wild thyme.*

Fl. purple. July, August. Perennial. Hills and dry pastures.

**THYMUS VULGARIS. (Linn.) *Thymus, Garden thyme, Thyme.*

Fl. purple. July, August. Perennial. Native of the South of Europe.

THYMUS ZYGIS. (Willd.) *T. sylvestris, Wild thyme.* Spain.

Heating and strengthening; made into tea with honey, are diaphoretic, discussive, and expectorant. (G.) The essential oil of *T. vulgaris* is administered to remove flatulence. (L.) Used for culinary purposes.

The drug called in India *Pucha pat*, extensively employed by the natives and by the Arabs as an ingredient in tobacco for smoking, and the essential oil as a perfume, is supposed to be a plant belonging to this order. (O'Sh.)

ORDER 111.—VERBENACEÆ. (De Cand. Bot. Gal. 377. Endl. Gen. Pl. 632.)

Calyx tubular, generally persistent; *corolla* hypogynous, monopetalous, tubulous, deciduous, generally irregular; *stamens* generally four, didynamous, rarely two or six; *ovary* free, 2—4 celled; *ovules* erect, solitary, or in pairs; *style* one; *stigma* simple, or two-lobed; *pericarp* drupaceous, or baccate, 1—4 nuts (pyrena), which are sometimes enclosed in an utricular membrane; *embryo* straight; *radicle* inferior; *albumen* none. *Herbs,* or *shrubs,* with opposite exstipulate *leaves.*

AVICENNIA. (Endl. Gen. Pl. 638.)

AVICENNIA NITIDA.

A tree very common on the eastern coast of Demerara, the bark of which is used in tanning. It is termed *Courida Bark.*

AVICENNIA TOMENTOSA. (Linn.) *A. resinifera.* India.
Exudes resin.

CALLICARPA. (Endl. Gen. Pl. 637.)

CALLICARPA LANATA. (Roxb.) East Indies.
Bitterish and sub-aromatic; employed in Indian medicine. (L. ex Royle.)

CLERODENDRUM. (Endl. Gen. Pl. 637.)

CLERODENDRUM INERME. (H. K.) *Volkameria inermis.* (Linn.)
Yields resin. (G.) Has been occasionally employed on account of its slightly bitter and sub-astringent qualities, but is not of much importance. (L.)

CONGEA. (Endl. Gen. Pl. 638.)

CONGEA VILLOSA. (Roxb.) East Indies.
Has leaves with a strong, heavy, disagreeable smell; used by the natives of India in fomentations. (L. ex Roxb.)

GMELINA. (Endl. Gen. Pl. 636.)

GMELINA PARVIFLORA. (Roxb.) East Indies.
Has the power of rendering water mucilaginous, which is employed in India as a ptisan for the cure of the heat of urine in gonorrhœa. (L. ex Roxb.)

PREMNA. (Endl. Gen. Pl. 636.)

PREMNA INTEGRIFOLIA. (Linn.) Asia, New Holland.
Slightly bitter and astringent; has been occasionally employed in medicine, but is of little importance. (L.)

STACHYTARPHA. (Endl. Gen. Pl. 633, in *Verbena.*)

STACHYTARPHA JAMAICENSIS. (Vahl.) *Verbena jamaicensis.* (Linn.) *Jamaica vervain.* West Indies.
Juice cathartic, deobstruent, emmenagogue. (G.) The expressed juice of the leaves is given in Tortola as a cooling purgative to children, in doses of one or two table-spoonfuls; in the French West Indies it is employed in decoction for clysters, and also as an anthelmintic; it has, moreover, some reputation for promoting the menstrual discharge; in Brazil, the fresh leaves bruised are applied to ulcers; it is there called *Urgeráo*, or *Jarbáo.* (L.)

TECTONIA. (Endl. Gen. Pl. 636.)

TECTONIA GRANDIS. (Willd.) *Teak wood.* East Indies.
Leaves used against the thrush and dropsy, and also to purify water. (G.) A timber tree of immense size and great durability, justly called the oak of the east, famed to be the most useful wood in Asia, being easily worked, and at the same time both strong and durable; considered superior to all others for ship-building. (Lou.)

VERBENA. (De Cand. Bot. Gal. 377. Endl. Gen. Pl. 633.)

*VERBENA OFFICINALIS. (Linn.) (E. B. 767.) *Verbena, Common vervain.*
Fl. small, purple. July. Perennial. Road-sides and waste ground.
Febrifuge, vulnerary, used externally as a rubefacient in rheumatism and other pains of the joints; root, worn round the neck, cures

scrofulous and scorbutic affections. (G.) Considered by the ancients as a sacred plant, used in making leagues by ambassadors, sacrificial rights, incantations, &c., and by the moderns, as an amulet, as well as for medical purposes. (Lou.)

VITEX. (De Cand. Bot. Gal. 377. Endl. Gen. Pl. 635.)

VITEX AGNUS CASTUS. (Linn.) *Agnus castus.* Sicily.

Flowering tops, cooling, drying, and looked upon as anaphrodisiac, whence they were used to strew the beds of the vestal virgins and Christian nuns. (G.) Fruit acrid; according to Forskahl, the seeds are reputed at Smyrna to be a certain remedy against colic, if powdered and strewed over half an onion and applied to the stomach. (L.)

VITEX NEGUNDO. (Linn.) East Indies.

In India, a decoction of the aromatic leaves helps to form a warm-bath for women after delivery; bruised, they are applied to the temples for headache; pillows stuffed with them are put under the head to remove a catarrh and the headache attending it. (L. ex Roxb.) Fruit acrid. (L.)

VITEX TRIFOLIA. (Linn.) East Indies.

The leaves are a powerful discutient, and employed by the Malays to remove the boss; the leaves are given in decoction and infusion, and formed into a cataplasm, which is applied to the enlarged spleen. (Roxb.) The fruit is acid, and called in India *Filfil burree*, or *Wild pepper*. (L.)

VOLKAMERIA.

VOLKAMERIA INERMIS. (Linn.) India.

Juice of root and leaves bitter; given as an alterative in venereal complaints and scrofula. Dose, a table-spoonful. (O'Sh.)

ORDER 112.—ACANTHACEÆ. (De Cand. Bot. Gal. 378. Endl. Gen. Pl. 696.)

Calyx divided, persistent, often bracteate; *corolla* monopetalous, hypogynous, deciduous, irregular; *stamens* 2—4 didynamous; *ovary* with a glandular disc, surrounding the base, two-celled, cells many-seeded; *style* one; *stigma* bilobate; *capsule* two-celled, cells many-seeded, by abortion one-seeded, bursting elastically with two valves; dissepiment opposite the valves separable into two pieces through the axis, those pieces attached to the valves, sometimes separating from them with elasticity, entire, or occasionally spontaneously separating in two, their inner edge bearing the seeds; *seeds* roundish, hanging by the ascending processes of the placenta; *albumen* none; *radicle* inferior; *cotyledons* foliaceous. *Herbs* or *shrubs*, chiefly tropical; *leaves* opposite, exstipulate *inflorescence* terminal, or axillary, in spikes.

ACANTHUS. (De Cand. Bot. Gal. 378. Endl. Gen. Pl. 703.)

ACANTHUS MOLLIS. (Linn.) *Acanthus, Branca ursina, Bear's breech.* Italy.

Leaves diuretic, externally maturative; dye a fine yellow. (G.) Leaves emollient, used for poultices. (L.)

ACANTHUS SPINOSUS. (Linn.) *A. sylvestris, Wild brank ursine.* Italy.

Herb diuretic, astringent.

ADHATODA. (Lindl. Nat. Sys. 285.)

ADHATODA VASICA. (Nees.) *Justicia adhatoda.* (Linn.) *Malabar nut-tree.* Ceylon.

Leaves purgative. (G.) Flowers, leaves, and roots, are supposed to possess antispasmodic qualities, they are bitterish and subaromatic. (L.) The wood is soft, and much esteemed for making charcoal for gunpowder. (O'Sh.)

ANDROGRAPHIS. (Endl. Gen. Pl. 707.)

ANDROGRAPHIS PANICULATA. (Wall.) *Justicia paniculata.* (Burm.) *Creata.* East Indies, China.

Root and herb externally bitter, stomachic. (G.) Much celebrated as a stomachic, and used as a remedy for cholera and dysentery, and in intermittent fevers; it is the basis of a French mixture called *Drogue amère,* said also to be alexipharmic. (L.)

BARLERIA. (Endl. Gen. Pl. 701.)

BARLERIA LONGIFOLIA. (Willd.) East Indies.

Root diuretic.

GENDARUSSA. (Endl. Gen. Pl. 705.)

GENDARUSSA VULGARIS. (Nees.) *Justicia gendarussa.* (Linn.) East Indies.

Leaves and tender stalks, when rubbed, have a strong and not unpleasant smell, and are, after being roasted, prescribed in India in cases of chronic rheumatism, attended with swelling at the joints. (Ainslie.) The plant is said to have emetic powers. (L.)

JUSTICIA. (Endl. Gen. Pl. 706.)

JUSTICIA ECBOLIUM. (Linn.) East Indies.

Diuretic. (L.)

JUSTICIA BIFLORA. (Vahl.) East Indies.

Leaves emollient. (L.)

JUSTICIA PECTORALIS. (Jacq.) *Balsam.* West Indies.

Vulnerary, resolvent; a syrup is made from it, and used in diseases of the chest. (G.) Esteemed a stomachic in the West Indies. (L.)

RHINACANTHUS. (Endl. Gen. Pl. 706.)

RHINACANTHUS COMMUNIS. (Wall.) *Justicia nasuta.* (Linn.) *J. scandens.* (Vahl.) India.

Milk boiled on the roots, is reckoned aphrodisiacal in India; rubbed with lime-juice and pepper, they are often used with good effect to cure the ringworm or herpes miliaris, which in India is a most troublesome disease, and very common; they are also reckoned alexipharmic. (L.)

RUELLIA. (Endl. Gen. Pl. 699.)

RUELLIA TUBEROSA. (Linn.) Jamaica.

Used instead of ipecacuanha.

ORDER 113.—LENTIBULARIÆ. (De Cand. Bot. Gal. 378. (*Utricularieæ.*) Endl. Gen. Pl. 728.)

Calyx divided, persistent; *corolla* monopetalous, hypogynous, irregular, spurred, bilabiate; *stamens* two, included, inserted into the base of the corolla; *anthers* simple

sometimes contracted in the middle; *ovary* one-celled; *style* one, very short; *stigma* bilabiate; *capsule* one-celled, many-seeded, placenta central, large; *seeds* small, exalbuminous; *embryo* sometimes dicotyledonous, sometimes undivided. *Aquatic* or *marsh herbs; leaves* radical; *scape* one, or many-flowered; *flowers* unibracteate, or rarely ebracteate.

PINGUICULA. (De Cand. Bot Gal. 378. Endl. Gen. Pl. 729.)

*PINGUICULA VULGARIS. (Linn.) (E. B. 70.) *Common butterwort, Yorkshire sanicle.*

Fl. purple. June. Perennial. Bogs and marsh banks.

Leaves heal wounds and chaps in the skin; made into a purging syrup; used to thicken milk, turn it sour, and make it keep for any length of time. (G.) Linnæus says, that the milk of the reindeer, poured on the fresh leaves, and set aside for a day or two, becomes ascescent, acquires consistence and tenacity, and neither the whey nor the cream separate; in this state it is reckoned a very grateful food in Sweden and Norway; on cow's milk it acts like common rennet. (Lou.)

ORDER 114.—PRIMULACEÆ. (De Cand. Bot. Gal. 379. Endl. Gen. Pl. 729.)

Calyx monosepalous, persistent, 4—5 lobed; *corolla* monopetalous, hypogynous, regular, staminiferous, limb more or less deeply divided; *stamens* inserted into the corolla, equal in number to its lobes, and opposite to them; *ovary* free; *style* one; *stigma* simple; *capsule* one-celled, many-seeded; *placenta* central, free; *embryo* straight, within a fleshy albumen; *radicle* inferior. *Herbs* with opposite rarely alternate *leaves*, or with simple radicle ones.

ANAGALLIS. (De Cand. Bot. Gal. 381. Endl. Gen. Pl. 733.)

*ANAGALLIS ARVENSIS. (Linn.) (E. B. 529.) *A. terrestris mas, Pimpernel, Poor man's weather glass, Scarlet pimpernel.*

Fl. scarlet. June, July. Annual. Cornfields.

Var. β. *A. cærulea.* (E. B. 1823.) *A. fœmina, Blue-flowered pimpernel.*

Fl. blue.

Used in mania and against hydrophobia; flower used in epilepsy. (G.) Has some reputation in cases of madness; it appears to possess energetic powers, for Orfila destroyed a dog by making him swallow three drachms of the extract; it was found to have inflamed the mucous membrane of the stomach; a similar result was obtained by Grenier; it has been prescribed in epilepsy and dropsy. (L.)

ANDROSACE. (De Cand. Bot. Gal. 381. Endl. Gen, Pl. 730.)

ANDROSACE MAXIMA. (Willd.) *Annual navel-wort.* Austria.

Diuretic.

CORTUSA. (De Cand. Bot. Gal. 384. Endl. Gen. Pl. 731.)

CORTUSA MATTHIOLI. (Linn.) *Bear's ear sanicle.* Austria.

Cephalic, anodyne, expectorant.

CYCLAMEN. (De Cand. Bot. Gal. 385. Endl. Gen. Pl. 731.)

*CYCLAMEN HEDERÆFOLIUM. (Willd.) (E. B. 548.) *C. Europæum, Artanita, Cyclamen, Ivy-leaved sow-bread, Sow-bread.*

Fl. white, or flesh coloured. April. Perennial. Kent and Suffolk.

Roots drastic, emmenagogue, errhine; leaves bruised and made into a pessary are emmenagogue, and cause abortion; an ointment is made from it, which, when rubbed on the navel, purges and kills worms. (G.) A very acrid plant, especially the root, whose acrimony is not much perceived at the first tasting, but soon becomes intolerable. (Smith.) It has been much used medicinally; its action being that of a drastic purgative, and formerly it was much esteemed as an emmenagogue, but whether its reputation was owing to its actual powers, or to its placentiform root, is doubtful; its acrid principle has been considered to be a body sui generis, and named *Arthanitine*. (L.)

LYSIMACHIA. (De Cand. Bot. Gal. 380. Endl. Gen. Pl. 732.)

*LYSIMACHIA NUMMULARIA. (Linn.) (E. B. 528.) *Nummularia, Herb twopence, Moneywort.*

Fl. yellow. June, July. Perennial. Shady places and wet pastures.

*LYSIMACHIA VULGARIS. (Linn.) (E. B. 761.) *Great loosestrife, Willow herb, Yellow loosestrife.*

Fl. yellow. June, July. Perennial. Sides of rivers and wet shady places.

Astringent.

PRIMULA. (De Cand. Bot. Gal. 383. Endl. Gen. Pl. 731.)

**PRIMULA AURICULA. (Linn.) *Auricula ursi, Garden auricula, Yellow bear's ear.*

Fl. of every hue. May. Perennial. Native of the Alps.

Herb vulnerary and expectorant.

*PRIMULA ELATIOR. (With.) (E. B. 513.) *P. veris elatior, Great cowslip, Oxlip primrose.*

Fl. sulphur-yellow. April, May. Perennial. Woods and thickets.

Root emetic, herb anodyne.

*PRIMULA VERIS. (Linn.) (E. B. 5.) *P. veris officinalis, Paralysis vulgaris, Pagils, common Cowslip.*

Fl. yellow. April, May. Perennial. Meadows and pastures.

Flowers used to flavour wine, and render it narcotic. (G.) The flowers possess well-marked sedative properties, and make a pleasant soporific wine. (L.)

*PRIMULA VULGARIS. (Huds.) (E. B. 4.) *P. veris acaulis, P. veris vulgaris, P. officinalis, Common primrose.*

Fl. sulphur-yellow. April, May. Perennial. Woods and hedgebanks.

Properties same as those of *P. elatior*.

SAMOLUS. (De Cand. Bot. Gal. 385. Endl. Gen. Pl. 734.)

*SAMOLUS VALERANDI. (Linn.) (E. B. 703.) *Brook weed, Water pimpernel.*

Fl. white. July. Perennial. Waste places, on a sandy soil.

Leaves heal wounds and chaps in the skin; made into a purging syrup. (G.) Pliny says the plant was considered among the Gauls as a specific in all maladies of swine; it was collected with mystic ceremonies. (Loud.)

SOLDANELLA. (De Cand. Bot. Gal. 385. Endl. Gen. Pl. 731.)

SOLDANELLA ALPINA. (Linn.) Switzerland.

Properties the same as those of *Cyclamen hederæfolium.*

ORDER 115.—GLOBULARIEÆ. (De Cand. Bot. Gal. 386. Endl. Gen. Pl. 348.)

Flowers capitate, surrounded with a polyphyllous involucrum, seated on a chaffy receptacle; *calyx* monosepalous, tubular, five-lobed; *corolla* hypogynous, inserted into the receptacle, tubular, unequally five-lobed; *stamens* 4—5 inserted into the upper part of the tube, and alternate with the lobes of the corolla; *anthers* one-celled; *ovary* free, ovoid, with a single pendulous ovule; *style* bifid; *fruit* ovoid, one-seeded, covered with the persistent calyx; *embryo* straight; *radicle* superior; *albumen* fleshy. *Herbs* or *shrubs*; *leaves* alternate.

GLOBULARIA. (De Cand. Bot. Gal. 386. Endl. Gen. Pl. 640.)

GLOBULARIA ALYPUM. (Linn.) *Montpelier turbith.* South of Europe.

Root purgative; leaves used for *senna.* (G.) A bitter drastic purgative, once supposed to be the λυπον of Dioscorides, and hence called *Frutex terribilis;* this, however, appears to be an error. (L.)

GLOBULARIA NUDICAULIS. (Linn.) Germany.

GLOBULARIA VULGARIS. (Linn.) Middle of Europe.

Purgative like *G. alypum*, and have been employed as resolvents and vulneraries, according to Lemery. (L.)

ORDER 116.—PLUMBAGINEÆ. (De Cand. Bot. Gal. 387. Endl. Gen. Pl. 348.)

Perigone double, persistent, the outer row monosepalous, tubular, entire, or toothed, the inner one resembling a corolla, hypogonous, mono-, or polypetalous; *stamens* five, in the monopetalous plants inserted on the receptacle; in the polypetalous ones, adnate to the base of the petals; *ovary* free, simple, one-seeded, ovule inverse, pendulous from the apex of the funiculous, which springs from the bottom of the ovary; *styles* many or one, with many stigmas; *capsule* one-seeded; *seeds* inverse; *embryo* compressed, surrounded by a farinaceous albumen. *Herbs* or *shrubs*, with simple entire *leaves*; *flowers* hermaphrodite, capitate, or spicate.

ARMERIA. (De Cand. Bot. Gal. 389. Endl. Gen. Pl. 349.)

*ARMERIA VULGARIS. (Willd.) (E. B. 226.) *A. maritima, Statice armeria, Common thrift.*

Fl. rose-coloured. July, August. Perennial. Muddy sea-shores.

Dr. Ebers speaks of the flowers of this plant, vulgarly called "Pissblume" in Germany, as an active diuretic; from two drachms to an ounce of the flowers, freshly gathered, and quickly dried, should be gently boiled, and the patient allowed to drink of the decoction ad libitum; some aromatic, as anise or cinnamon, is added to the decoction; the remedy appears to cause the excretion of urine in a direct manner, (Med. Gaz. xx. 144.) (L.)

PLUMBAGO. (De Cand. Bot. Gal. 387. Endl. Gen. Pl. 349.)

PLUMBAGO EUROPÆA. (Linn.) *Dentaria, Dentillaria, Tooth wort.* South of Europe.

Caustic, corrosive; used by beggars to produce ulcers, in order to excite pity, and in toothache as a masticatory; may be used for ipecacuanha. (G.) A very acrid plant; it has been used to remove toothache, whence its French name, *Dentillaire;* in decoction, it has been recommended as a stimulating wash to old and sluggish ulcers, and as a kind of potential cautery to cancers, but Sauvage de la Croix says, that a young woman who had it applied, affirmed that the pain it occasioned was intolerable, and that she felt as if being flayed alive; administered internally, in small doses, it is said to be as effectual an emetic as ipecacuanha. (L. ex Burnett.)

PLUMBAGO ROSEA. (Linn.) East Indies.

Used as a vesicatory. (G.) This is usually believed to be the *Radix vesicatoria* of Rumph, which being sliced and applied to the skin, produces blisters, but less rapidly and effectually than cantharides; it, however, appears very doubtful whether the Amboyna plant is the same as this. (L.)

PLUMBAGO SCANDENS. (Linn.) *Herbe au diable.* West Indies.

PLUMBAGO ZEYLANICA. (Linn.) East Indies.

Said to have similar properties. (L.) The former used in the itch. (G.)

SALVADORA. (Endl. Gen. Pl. 349.)

SALVADORA PERSICA. (Garc.) *Cissus arborea.* (Forsk.) *Rivina paniculata.* (Linn.) East Indies, Persia, &c.

Fruit has a strong aromatic smell, and tastes like garden cress; bark of root remarkably acrid; bruised and applied to the skin it soon raises blisters, for which purpose the natives of India often use it; as a stimulant, it promises to be a medicine of very considerable power. (Roxb.) It is supposed to be the mustard tree of Scripture. (L.)

STATICE. (De Cand. Bot. Gal. 387. Endl. Gen. Pl. 349.)

STATICE CAROLINIANA. (Walt.) *Marsh rosemary.* United States.

Root, *Statice, P. U. S.*, used in dysentery. (G.) Root a most powerful and intense astringent, chiefly used as a local remedy in aphthæ, and similar affections of the mouth and fauces; has been employed with success in cynanche maligna. (L.)

*STATICE LIMONIUM. (Linn.) (E. B. 102.) *Behen rubrum, Limonium maritinum, Red behen, Spreading spiked thrift, Sea lavender.*

Fl. blue. July, August. Perennial. Muddy sea shores.

Root astringent, used in loosenesses, &c., seeds also astringent; druggists sell, under this name, round transverse slices of a root resembling jalap, of a reddish-brown colour. (G.)

ORDER 117.—PLANTAGINEÆ. (De Cand. Bot. Gal. 390. Endl. Gen. Pl. 346.)

Flowers hermaphrodite, rarely monœcious; *perigone* double, the outer four-partite, persistent; the inner (*corolla?*) monopetalous, tubular, hypogynous, scariose, persistent, bearing stamens at the base; limb four-parted; *stamens* four, inserted into the tube, and alternate with the segments; *filaments* exserted; *anthers* two-celled, the cells dehiscing

longitudinally; *ovary* free, simple; *style* one, capillary; *stigma* one, hispid, undivided, rarely semibifid; *capsule* dehiscing transversely by a circular fissure, divided into 2—4 cells by a longitudinal dissepiment, which is either flat or four-sided; *seeds* sessile, peltate, affixed to the sides of the dissepiment, definite, or indefinite, in number; *embryo* straight, within a subcorneous albumen; *radicle* inferior.

PLANTAGO. (De Cand. Bot. Gal. 396. Endl. Gen. Pl. 348.)

PLANTAGO ALBICANS. (Willd.) *Holosteum, Spanish plantain.* South of Europe.

Herb vulnerary, used in hernia.

PLANTAGO ARENARIA. (W. and K.) Hungary.

Seeds mucilaginous, purgative.

*PLANTAGO CORONOPUS. (Linn.) (E. B. 892.) *Cornu cervinum, Buck's horn plantain.*

Fl. brownish. June, July. Annual. Gravelly soils on the coast.

Roots and leaves, beaten up with bay salt, are applied as a poultice to the wrists in agues; a decoction of the leaves is given in disorders of the eyes. (G.)

PLANTAGO CYNOPS. (Linn.) South of Europe.

Qualities same as those of *P. areneria.*

PLANTAGO ISPAGHULA. (Flem.) Persia.

A mucilaginous drink is prepared from the seeds in India, and often prescribed by European practitioners, where emollients are wanted; it also forms part of the native Materia Medica. (L.)

*PLANTAGO LANCEOLATA. (Linn.) (E. B. 175.) *Rib grass, Ribwort plantain.*

Fl. brownish, scariose. June, July. Perennial. Meadows and pastures.

*PLANTAGO MAJOR. (Linn.) (E. B. 1558.) *Way bread. Greater plantain.*

Fl. brownish, scariose. June, July. Perennial. Pastures and road sides.

*PLANTAGO MEDIA. (Linn.) (E. B. 1559.) *Hoary plantain, Lamb's lettuce.*

Fl. silvery, scariose. June, July. Perennial. Meadows and pastures.

Roots useful in vernal agues; leaves astringent, vulnerary, used whole as a dressing for wounds; juice of the leaves used as a collyrium, and internally in fevers.

PLANTAGO PSYLLIUM. (Linn.) *Psyllium pulicaria, Flea wort.* South of Europe and Barbary.

Seeds mucilaginous, purgative. (G.) The seeds are peculiarly mucilaginous, and have been made into demulcent drinks, as a good substitute for linseed or marsh mallows. (L.) In the north of Europe they are used for washing muslins. (O'Sh.)

Sub-class IV.—MONOCHLAMYDEÆ.

Perianth single; *petals* incorporated with the calyx, or entirely wanting.

Order 118.—NYCTAGINEÆ. (De Cand. Bot. Gal. 393. Endl. Gen. Pl. 310.)

Involucrum calyciform, monophyllous, one or many-flowered; *perigone* monopetalous, coloured, dilated at the base, contracted above the ovary, and then again dilating into a tube, persistent, not adhering to the ovary; *stamens* definite, inserted into a glandular disk, surrounding the ovary; *filaments* adhering to the contracted part of the perigone; *ovary* one, covered by the perigone; *style* one; *stigma* capitate; *capsule* one-seeded, indehiscent, covered by the stameniferous disk and perigone; *embryo* rolled round the farinaceous albumen. *Herbs* or *shrubs*, generally with opposite leaves.

Boerhavia. (Endl. Gen. Pl. 311.)

Boerhavia decumbens. (Vahl.) *B. diandra.* (Aubl.) *B. laxa.* (Pers.) *Hogmeat.* Guiana, Santa Cruz.

According to Aublet the root is emetic, and called *Ipecaquana* in Guiana. Schomburgh says that it is astringent, and used in the form of decoction in dysentery. (L.)

Boerhavia tuberosa. (Lamb.) *Herba purgativa.* Persia.

Roots purgative. (G.) Reported to act both as a purgative and emetic. (L.)

Mirabilis. (Endl. Gen. Pl. 311. (*Nyctago.*) (De Cand. Bot. Gal. 393.)

Mirabilis dichotoma. (Linn.) *Nyctago dichotoma.* (Juss.) *Jalapa officinarum.* (Mart.)

The thick fleshy root is purgative, and at one time was taken for the jalap of the shops. (L.)

**Mirabilis Jalapa. (Linn.) *Nyctago jalapa.* (D. C.) *Marvel of Peru.*

Fl. red, pink, white, or striped. July, September. Perennial. Native of Peru.

Root purgative. (G.) Said by some not to be purgative, by others to be so, and to be used for adulterating true jalap. (L.)

**Mirabilis longiflora. (Linn.) *Nyctago longiflora.* (D. C.) *Long-tubed marvel of Peru.*

Fl. as M. jalapa. August, September. Annual. Native of Mexico.

The root is said to be more purgative than that of any other species. (L.)

Order 119.—AMARANTHACEÆ. (De Cand. Bot. Gal. 393. Endl. Gen. Pl. 303.)

Perigonium (*calyx?*) free, monosepalous, persistent, 4—5 lobed, often coloured; *stamens* three or five, hypogynous, free or monadelphous; *ovary* one, one-celled, rarely two-celled, one, or rarely many-ovuled; *style* and *stigma* simple, or numerous; *capsule* one-celled, dehiscing transversely, or indehiscent; *seed* solitary, or rarely numerous, affixed to a central receptacle; *albumen* farinaceous, encircled by the curved *embryo*. *Herbs*, with alternate entire *leaves*; *flowers* small, spiked, panicled, or capitate, often of distinct sexes.

ACHYRANTHES. (Endl. Gen. Pl. 303.)

ACHYRANTHES ASPERA. (Willd.) India.

An infusion of the root given as a mild astringent in bowel complaints; the flowering spike made into pills with a little sugar, is a popular preventive medicine in Behar, for persons bitten by rabid dogs; the root is used by the natives as a toothbrush. (O'Sh.)

AMARANTHUS. (De Cand. Bot. Gal. 393. Endl. Gen. Pl. 303.)

*AMARANTHUS BLITUM. (Linn.) (E. B. 2212.) *Blitum minus, All seed, Wild amaranth, Upright blite.*

Fl. greenish. August. Annual. Low waste grounds near towns.

Refrigerant, slightly astringent, used as a potherb.

AMARANTHUS CAUDATUS. (Linn.) *Amaranthus Flos amoris, Flower gentle, Love lies bleeding.* East Indies.

Flowers slightly astringent.

AMARANTHUS MELANCHOLICUS. (Linn.) Brazil.

Used for emollient poultices by the natives.

AMARANTHUS OBTUSIFOLIUS.

Mentioned as a diuretic, but not found in systematic works. (L.)

AMARANTHUS OLERACEUS. East Indies.

AMARANTHUS VIRIDIS. (Linn.) *Blitum album, Blitum rubrum, Great white blite, Red blite.* Brazil.

Used as potherbs. (G.) *A. viridis* used in Brazil for emollient poultices. (L.) Nearly all the species of Amaranthus may be used as emollients in enemata, cataplasms, diluents, drinks, &c. (O'Sh.)

GOMPHRENA. (Endl. Gen. Pl. 301.)

GOMPHRENA OFFICINALIS. (Mart.) South and middle of Brazil.

Root is employed for nearly the same purposes as *Aristolochia serpentaria*, in North America; it appears to be a stimulating tonic; the thick club-shaped root is chiefly used in spasms, dyspepsia, intermittent fevers, diarrhœa, &c., and is called *Paratodo.* (L.)

GOMPHRENA POLYGONOIDES. *Achryanthes repens.*

Root and flowers narcotic. (G.)

ORDER 120.—CHENOPODEÆ. (De Cand. Bot. Gal. 394. Endl. Gen. Pl. 292.)

Perigone free, monosepalous, five-parted, æstivation imbricated; *stamens* inserted into the lower part of the perigone, equal in number to its segments; *ovary* one; *style* one, or many; *fruit* indehiscent, either a many-celled, many-seeded berry, or a cariopsis, either naked, or covered by a membraneous perigone; *albumen* generally farinaceous, central, the *embryo* spirally, or circularly twisted round it; *radicle* inferior. *Herbs,* or rarely *shrubs,* with alternate simple *leaves,* and destitute of stipules or sheaths; *flowers* small, greenish, often hermaphrodite.

ATRIPLEX. (Bot Gal. 397. Endl. Gen. Pl. 293.)

*ATRIPLEX ANGUSTIFOLIA. (Smith.) (E. B. 1774.) *A. patula* (*Huds.*), *Narrow-leaved orache, Spreading narrow-leaved orache.*

Fl. greenish. July. Annual. Cultivated and waste ground.

Seeds emetic, sudorific, antidysenteric; a substitute for ipecacuanha.

ATRIPLEX HALIMUS. (Linn.) *Sea purslane.* South of Europe. Used as a potherb.

**ATRIPLEX HORTENSIS. (Linn.) *Garden orache, Orache.*
Fl. greenish. July, August. Annual. Native of Tartary.
Emollient, seeds emetic. (G.) Seeds reputed to be emetic; the leaves an old-fashioned potherb, once cultivated in lieu of spinach. (L.)

*ATRIPLEX LITTORALIS. (Linn.) (E. B. 708.) *Grass-leaved sea orache, Sea orache.*
Fl. greenish, mealy. July. Annual. Muddy salt marshes on the east coast.
Leaves and young shoots pickled and eaten in the manner of samphire.

*ATRIPLEX PORTULACOIDES. (Linn.) (E. B. 261.) *Portlaca marina, Sea purslane, Shrubby orache.*
Fl. yellowish. July, August. Small shrub. Muddy sea-shores.
Leaves and shoots pickled, and used to procure an appetite; warming, also cosmetic.

BASELLA. (Endl. Gen. Pl. 298.)

BASELLA CORDIFOLIA. (P. S.) East Indies.

BASELLA RUBRA. (Willd.) East Indies.
Esculent.

BETA. (De Cand. Bot. Gal. 399. Endl. Gen. Pl. 295.)

**BETA VULGARIS. (Linn.) *Common beet.*
Fl. Greenish. August, September. Biennial. Cultivated in gardens and fields.
B. vulgaris alba, White beet, root yields sugar; leaves eaten as spinach.
B. vulgaris rubra, Red beet, root red, nutritive, yields sugar. (G.) This is a well-known culinary root, used in salads either raw or boiled, forming a beautiful varnish, very much used as a pickle, preserved as a confiture, made a substitute for coffee, and yielding a sugar equal to that of the cane; the varieties most esteemed for salad are the small red and custebrandary, and for extracting sugar the green topped. (Loud.)
Beta hybrida, Mangel wurtzel, Root of scarcity, root red outside, white inside, very nutritive, yields sugar, leaves eaten as spinach. (G.) This is merely a coarse cultivated variety of *B. vulgaris.* (M'W.)

BLITUM. (De Cand. Bot. Gal. 399. Endl. Gen. Pl. 295.)

BLITUM CAPITATUM. (Linn.) *Strawberry spinach.* Austria.
Laxative.

CAMPHOROSMA. (De Cand. Bot. Gal. 395. Endl. Gen. Pl. 294.)

CAMPHOROSMA MONSPELIACA. (Linn.) *Camphorata, stinking ground vine.* South of Europe.
Nervine, cephalic, antarthritic. (G.) Abounds with a volatile oily salt, and is warm and stimulating. (Loud.)

CHENOPODIUM. (De Cand. Bot. Gal. 396. Endl. Gen. Pl. 296.)

CHENOPODIUM AMBROSIOIDES. (Linn.) *Mexican tea.* United States.

Stomachic, antiasthmatic, used as tea. (G.) All the plant has an agreeable penetrating smell; it has been used with advantage in the treatment of nervous diseases, and Plenck recommends it in chorea. (L.)

CHENOPODIUM ANTHELMINTICUM. (Linn.) *Jerusalem oak, Worm goose foot, Worm seed.* United States.

Chenopodium, P. U. S., expressed juice vermifuge. (G.) The whole plant has a strong, heavy, disagreeable odour; it yields from the seeds an abundance of oil, which, under the name of *Wormseed oil*, is powerfully anthelmintic; the expressed juice, or the leaves or seeds in powder, have similar properties. (L.)

CHENOPODIUM BARYSOSMON. (Roem. and Sch.) Upper Egypt.

An excessively fœtid plant, which Mr. Burnett supposed may be used for the same purposes as *C. olidum.* (L.)

*CHENOPODIUM BONUS HENRICUS. (Linn.) (E. B. 1033.) *Mercurialis, Tota bona, All good, English mercury.*

Fl. greenish. August. Perennial. Waste places and waysides.

Herb laxative, eaten as spinach; the roots as asparagus. (G.) Leaves sometimes applied to wounds, and for cleansing old ulcers. (Loud.)

CHENOPODIUM BOTRYS. (Linn.) *Ambrosia, Botrys, Oak of Jerusalem.* South of Europe, North America.

A stinking plant, used, when beat up with sugar, as an emmenagogue, antihysteric, and vermifuge; decoction used externally in eruptions. (G.) The whole plant powerfully and agreeably fragrant; it is reported by the French physicians to be a valuable expectorant, and to have been employed with much advantage in catarrh and humoral asthma. (L.)

*CHENOPODIUM MURALE. (Linn.) (E. B. 1722.) *Pes anserinus, Goosefoot, Nettle-leaved goosefoot.*

Fl. greenish. August. Annual. Waste places near towns.

Properties similar to those of *C. bonus henricus.*

*CHENOPODIUM OLIDUM. (Curt.) (E. B. 1034.) *Atriplex olida, C. vulvaria,* (Linn.) *Stinking goosefoot, Stinking orache.*

Fl. greenish. August. Annual. Waste places.

Emmenagogue, antihysteric, and vermifuge, decoction used externally in eruptions. (G.) According to Chevalier, this plant exhales pure ammonia, during its whole existence; notwithstanding its nauseous odour, it is still employed as an antispasmodic and emmenagogue, and is constantly to be found in the herb-shops of Covent Garden Market. (L.)

CHENOPODIUM QUINOA. (Willd.) *Quinoa.* Peru.

Used as a potherb. Seeds a substitute for rice. They are prepared for cooking by brushing or rubbing them in water, until the outer covering or husk is removed. The water becomes deep yellow, and should be renewed during the washing. The grain after being thus treated is white; it may now be dried and preserved for use. In this

state it is called *Quinoa;* and when boiled in the same manner as rice, forms an excellent article of food. The husks are bitter, and the seed preserved with the husks on is called by the Peruvians, *Quinoa amarga*, or *bitter Quinoa.*

*CHENOPODIUM VIRIDE. (Linn.) (E. B. 1723.) *Atriplex sylvestris, smooth-seeded goosefoot, Wild orache,* (Var. β, *C. leiospermum.*) (De Cand.)

Fl. greenish. July, August. Annual. Waste places and dunghills.

Herb laxative, discusses whitlows; seeds used in the jaundice.

SALICORNIA. (De Cand. Bot. Gal. 395. Endl. Gen. Pl. 293.)

SALICORNIA FRUTICOSA. (Linn.) Europe.

Yields *Barilla* by burning.

*SALICORNIA HERBACEA. (Linn.) (E. B. 2475.) *Jointed glasswort. Marsh samphire.*

Fl. green. August, September. Annual. Salt marshes.

Pickled, is eaten as samphire.

SALSOLA. (De Cand. Bot. Gal. 395. Endl. Gen. Pl. 298.)

SALSOLA INDICA. (Roxb.) East Indies.

Green leaves universally eaten by all classes of natives who live near the sea, and are reckoned very wholesome; the leaves of this plant alone saved many thousand lives during the famine of 1791–2–3. (O'Sh.)

*SALSOLA KALI. (Linn.) (E. B. 634.) *S. decumbens.* (Lamb.) *Kali, Saltwort, Prickly saltwort.*

Fl. green. July, August. Annual. Sandy sea-shores.

Emmenagogue, diuretic, and hydragogue; yields *Barilla* by being burned. (G.)

SALSOLA SATIVA. (Löft.) *Kali Hispanicum, Alicant glasswort.* Coast of Spain.

SALSOLA SODA. (Linn.) *Kali, glasswort.* South of Europe, North of Africa.

SALSOLA TRAGUS. (Linn.) South of Europe, North of Africa, &c.

All yield *Barilla* by burning. (G.) According to Guibourt, the sodas of commerce are furnished by the following plants: *Soda of Alicant*, which is the finest, by *S. sativa, kali, soda*, and *tragus;* it contains from twenty-five to forty per cent. of carbonate of soda; *Soda of Narbonne* by *Salicornia annua.* (Linn.) It contains 14—15 per cent. of Carb. soda; *Blanquette*, or *Soda of Aiguesmortes*, procured from a mixture of salt plants, with from 3—4 per cent. of the carbonate; finally, *Normandy soda*, obtained from *Fucus.* (L.)

SPINACHIA. (De Cand. Bot. Gal. 399. Endl. Gen. Pl. 294.)

**SPINACHIA INERMIS. (Mönch.) *Smooth spinach.*

**SPINACHIA SPINOSA. (Mönch.) *Rough spinach.*

Flowers green. July. Annual, Biennial. Native country unknown.

Leaves emollient, opening, boiled as greens.

Order 121.—PHYTOLACCACEÆ. (Endl. Gen. Pl. 975. Lindl. Nat. Ord. 210. *Chenopodeæ.* De Cand. Bot. Gal. 399.)

Calyx of four or five petaloid leaves; *stamens* either indefinite, or, if equal to the number of the divisions of the calyx, alternate with them; *ovary* of one or of several cells, each containing one ascending ovule; *styles* and *stigmas* equal in number to the cells; *fruit* baccate or dry, entire or deeply lobed, one or many celled: *seeds* ascending, solitary, with a cylindrical *embryo*, curved round mealy *albumen*, with the *radicle* next the hilum. *Under-shrubs* or *herbaceous plants*; *leaves* alternate, entire, without stipules, often with pellucid drops; *flowers* racemose.

Phytolacca. (De Cand. Bot. Gal. 399. Endl. Gen. Bot. 977.)

Phytolacca decandra. (Linn.) *Jucato callelæ*, *Poke*, *American pokeweed*, *Garget*, *Cocum Jalap*, *Pigeon berries.* North America.

Root, *Phytollacca*, *P. U. S.* emetic, infusing one ounce in a pint of wine, and taking two spoonsful; juice red. A very common domestic purge in America, leaves bruised, very detersive, of great use in cancerous cases as a poultice; young shoots eaten as asparagus; berries yield a red dye, but which does not stand; used to colour wine. (G.) Root an emetic approaching nearly to *Ipecacuanha.* Bigelow says, "From abundant experience, the result of many trials made in dispensary practice, I am satisfied that when properly prepared it operates in the same doses and with the same certainty as that drug." Its exhibition is sometimes attended by slight narcotic symptoms; externally applied, it excites a sense of heat and smarting; it cures psora and tænia capitis. (L.) The Anglo-American name *Poke* is a corruption of *Pocan*, the name by which it was formerly known in Virginia. (Loud.)

Rivina. (Endl. Gen. Pl. 976.)

Rivina humilis. (Willd.) *Herbe aux charpentiers.* West Indies. Pectoral.

Order 122.—POLYGONEÆ. (De Cand. Bot. Gal. 400. Endl. Gen. Pl. 304.)

Perigone free, simple, persistent, monosepalous, deeply divided, segments disposed in a double row, the inner one opposite to the sides of the ovary, the outer one opposite to its angles; *stamens* definite, inserted into the base of the perigone; *anthers* two-celled, four-furrowed, dehiscing laterally by a double chink; *ovary* one, free; *styles* many, or *stigmas* numerous, sessile; *cariopsis* more or less covered by the perigone, one-seeded; *embryo* lateral, or central, often curved; *albumen* farinaceous. *Herbs* with nodose stems, and alternate sheathing leaves, or with an interfoliaceous sheath or ochrea; *leaves* revolute when young.

Herbs acid or astringent, containing oxalic acid; contain also a red colouring matter, and may be used in tanning, and leaves may be made to yield *woad.*

Coccoloba. (Endl. Gen. Pl. 308.)

Coccoloba uvifera. (Linn.) *Sea-side grape.* West India Islands and North America.

Fruit very astringent, yields *Jamaica kino.* (G.) Leaves, wood, and bark excessively astringent: the decoction, prepared by evaporation, forms *Jamaica kino;* the fruit is eatable, and commonly sold in the West Indian market, but it is not much esteemed; the wood yields a red dye. (L.)

POLYGONUM. (De Cand. Bot. Gal. 403. Endl. Gen. Pl. 306.)

*POLYGONUM AMPHIBIUM. (Linn.) (E. B. 436.) *Amphibious persicaria.*

Fl. bright rose-coloured. July, August. Perennial. Ponds and lakes.

The root-like stems of this polygonum bear some resemblance to *Sarsaparilla*, and according to Coste and Willemet are substituted for the foreign drug, by the herbalists of Nancy: these authors also report that it resembles true sarsaparilla in its properties, and that the apothecaries and druggists of Lorraine use it in preference. (L.)

*POLYGONUM AVICULARE. (Linn.) (E. B. 1252.) *Centinodia, Polygonum, Common knot-grass.*

Fl. pale rose-coloured. May, September. Annual. Waste places.

Herb vulnerary, astringent; seeds nauseously aromatic, emetic, sometimes purgative. (G.) Fruit said to be emetic and cathartic. (L.)

POLYGONUM BARBATUM. (Linn.) China, East Indies, &c.

Considered as a diuretic at the Cape of Good Hope. In India, an infusion of its leaves is prescribed by native practitioners to alleviate the pain of severe colic. (L. ex Burnett.)

*POLYGONUM BISTORTA. (Linn.) (E. B. 509.) *Bistorta, Bistort, Snake-weed.*

Fl. flesh-coloured. June. Perennial. Moist meadows.

Root, *Bistortæ radix*, very astringent, dose ℈j. to ʒj., tans leather very well; young roots eaten as greens. (G.) A powerful astringent; the decoction may be employed in gleet and leucorrhœa as an injection, as a gargle in relaxed sore throat and spongy gums, and as a lotion to ulcers attended with excessive discharge; internally, it has been employed, combined with gentian, in intermittents; it may also be used in passive hæmorrhages and diarrhœa. (L. ex Pereira.) The young shoots were formerly eaten in herb puddings in the north of England, where it is known by the name of *Easter giant*, and about Manchester they are substituted for greens, under the name of *Patience dock*. (Loud.

*POLYGONUM CONVOLVOLUS. (Linn.) (E. B. 941.) *Volubilis nigra Black-bird weed, Climbing buck wheat.*

Fl. greenish. July, August. Annual. Corn-fields.

Seeds equally nutritive as those of *P. fagopyrum*, and much easier to cultivate.

*POLYGONUM FAGOPYRUM. (Linn.) (E. B. 1044.) *Fagopyrum, Buck wheat.*

Fl. pale red. July, August. Annual. About cultivated land, a doubtful native.

Seeds nutritive, fattening, well flavoured, made into bread, yield an oil. (G.) In China and other countries of the east it is cultivated as bread corn; the flour is also used in cookery and bread-making in various parts of Europe, to make cakes or crumpets in England, and as rice or gruel in Germany and Poland; the seed is said to be excellent for horses and poultry, the flowers for bees, and the plant green for soiling cows, cattle, sheep, or swine. (Loud.)

*POLYGONUM HYDROPIPER. (Linn.) (E. B. 989.) *Persicaria, Arse smart, Biting persicaria, Water pepper.*

Fl. reddish. August. September. Annual. Sides of lakes and ditches.

Vulnerary, detersive, and diuretic; dyes wool yellow; juice acidulous, acrid, sharp. (G.) Leaves so acrid as to act as vesicants; it is reputed to be a powerful diuretic, but to lose its activity by drying, on which account it requires to be used fresh. (L.)

*Polygonum Persicaria. (Linn.) (E. B. 756.) *Persicaria*, *Dead arse smart*, *Spotted persicaria*.

Fl. greenish, tipped with rose. August. Annual. Moist ground and waste places.

Properties the same as those of *P. hydropiper*. (G.)

Rheum. (Endl. Gen. Pl. 306.)

This genus is very important, on account of the officinal *Rhubarb* being produced by some of the species; it is, however, not a little curious, that up to the present time no one should have ascertained with precision from which of the many known species any of that which finds its way to Europe through Turkey and Russia is really obtained. It is probable that Professor Royle is correct in his opinion, that the officinal drug, obtained in the heart of Thibet, whither no botanist has ever penetrated, is the produce of some species still unknown. His account of the origin of officinal rhubarb is as follows:—"The rhubarb of commerce is well known to be brought by the Chinese to the Russian frontier town of Kiachta, according to the treaty formed between those powers in 1772; the Chinese obtain the rhubarb produced in China Proper from that part of the province of Shensee, now called Kansee, situated between north latitude 35° and 40°, but the best, according to the missionaries—who say it is called Tai Hoang, in the province of Letchuen—from the mountains called Suechan, or of Snow, which extend from north latitude 26° to 35°, and from about 100° to 105° of east longitude; that from the latter province probably forms much of what is called *China rhubarb:* the missionaries met large quantities of it brought down in the months of October and November: that from Kansa may afford some of what is called *Russian rhubarb;* but both Pallas and Rehman have ascertained that the greater portion, if not the whole of this, is obtained in April and May, from the clefts of rocks in high and arid mountains surrounding Lake Kokonor. Bell also learned that it was the produce of Mongolia, and Marco Polo of Succuir in Tanguth. Dr. Rehman ascertained that the trade is in the hands of one Bucharian family, who farm the monopoly from the Chinese government, and reside at Si-ning, a Chinese town on the very frontiers of Thibet, 3000 verstes from Kiachta, and twenty days' journey from Kiansin and Schansin, Tangutian towns, where the Bucharians go to purchase rhubarb; this would bring the rhubarb country within 95° of east longitude, in 35° of north latitude, that is, in the heart of Thibet." Rhubarb in small doses is an astringent tonic, its operation being principally or wholly confined to the digestive organs. In relaxed conditions of these parts, it promotes the appetite, assists the digestive process, improves the quality of the alvine secretions, and often restrains diarrhœa. In large doses it operates slowly and mildly as a purgative; it has also been used as a

topical application to promote the healing of indolent, non-painful ulcers. (Pereira.)

RHEUM CASPICUM. (Fischer.) Altaic mountains.

RHEUM COMPACTUM. (Linn.) Tartary, China.

Roots supposed to be mixed with those of *R. palmatum.* (G.) Guibourt says, that the root of this is a pretty good imitation of Chinese rhubarb, but when cleared of the yellow powder that covers it, there is no difficulty in recognising it by its reddish or whitish-red colour, its smell of "Rhapontic" (in which respect it corresponds with *R. undulatum*), its close radiated marbling, its staining the saliva yellow only in a slight degree, and in its not being gritty. (L.)

RHEUM CRASSINERVIUM. Native country unknown.

This plant was sent by Dr. Fischer from the imperial garden at St. Petersburg with this name, and was placed in the apothecaries' garden at Chelsea. Mr. Wm. Anderson, the gardener there, states that the roots, when three years old, being accidentally uncovered, were found as thick as the wrist, and brittle, and when examined at Apothecaries' Hall, were found to possess the peculiar colour and odour of the best Turkey rhubarb. (L.)

RHEUM EMODI. (Wall.) *R. anstrale.* (Don.) Mountains of Gossain Than, Kamaon.

When this plant was first made known, it was stated by Professor Don to be the undoubted origin of the Russian and Turkey rhubarbs; but Dr. Pereira, who had samples of the root from Dr. Wallich, found that the specimens had hardly any resemblance to the rhubarb of the shops; the roots of this and of *R. Webbianum* nevertheless appear to be valuable as medicines, for Mr. Twining reported that, after an experience of forty-three cases in the general hospital at Calcutta, he found them as tonic and astringent, superior to corresponding quantities of the best rhubarb, but not, on the whole, so eligible in obstinate costiveness, on account of their aroma and astringency; they are less disagreeable to take than the best Turkey rhubarb, nearly as efficacious as a purge, and very superior in small doses as a tonic and astringent in profluvia. (L.)

RHEUM LEUCHORIZUM. (Pall.) *R. nanum.* (Siev.) *R. tataricum.* (Linn.) Tartary.

When Pallas was at Kiachta, the Bucharian merchants, who supplied the crown with rhubarb, brought some pieces of rhubarb which had a white colour, and was equal in its effects to the best sorts. (Pereira.) It is said to have been the produce of this plant. (L.)

RHEUM PALMATUM. (Linn.) Chinese Tartary.

This has been considered one of the sources of Tartarian rhubarb. Pallas was, however, assured by the Bucharian merchants, that they knew nothing of such leaves as those of this species, and that the leaves of genuine rhubarb were round, and much cut at the edges. Pallas considered this account to agree best with *R. compactum;* nevertheless, the opinion that *R. palmatum* is the source of the true officinal rhubarb, continues to be generally entertained. In the last edition of

the London Pharmacopœia this is asserted, and M. Guibourt declares that of all the cultivated kinds this alone resembles exactly in colour and smell the rhubarb of China. It is stated by Stevenson and Churchill that this plant is extensively cultivated near Banbury for the supply of the London market. The cultivation of rhubarb for medicinal use was commenced in the neighbourhood of Banbury about the year 1789, by Mr. Hayward, an apothecary of that place, to whom the gold medal of the Society of Arts was awarded in the year 1794, for the cultivation of the "true rhubarb," or "*Rheum palmatum*." It has since been ascertained that the rhubarb grown at Banbury is not the *Rheum palmatum*, but *Rheum rhaponticum*. About twenty tons of rhubarb for medicinal use are annually sent into the London market from Banbury.

RHEUM RHAPONTICUM. (Linn.) Borders of the Euxine and Caspian seas.

According to Guibourt, the root is bitter, astringent, and aromatic; when chewed, mucilaginous, and not at all gritty; the smell like that of rhubarb, but more disagreeable: it is cultivated in large quantities at a place called Rheumpole, near L'Orient, in the department of Morbihan. The prepared root is said to be extremely like rhubarb in appearance, and to be what was analyzed by M. Henry as French rhubarb. (L. ex Bull. de Pharmacie, vol. vi. p. 87.)

This is one of the species cultivated for domestic use in pies, &c. It is the kind cultivated at Banbury for medicinal use. See above.

RHEUM RIBES. (Willd.) *Wharted-leaved rhubarb.* Levant.

The specific name of this species has been derived from its application in the preparation of a root, formerly used in medicine, and called *Rybes of Serapias.*

RHEUM SPICIFORME. (Royle.) Himalayas.

Roots lighter coloured, and more compact than those of *R. emodi.* Dr. Royle says that the rhubarb sent by the late Mr. Moorcroft from near Ludak was, for compactness of texture, colour, and properties, as fine as any he has ever seen; it is not improbable it may have been furnished by this species. (L.)

RHEUM UNDULATUM. (Linn.) *R. rhabarbarum.* (Linn.) China.

Roots supposed to be mixed with those of *R. palmatum.* (G.) A Tartarian merchant, a dealer in rhubarb, gave what were, or what were said to be, seeds of the genuine rhubarb plant to Kauw Boerhaave, first physician to the Emperor of Russia, about the year 1750, and those seeds produced both R. undulatum and R. palmatum. Georgi further states, that a Cossack pointed out to him the leaves of the former as the true species; hence it was at once regarded as the real officinal plant, and cultivated as such by the Russian government, but the culture is discontinued, and Guibourt states that he never could make real rhubarb from it; it is cultivated in France, and forms a part of the *French rhubarb.* Stevenson and Churchill say, that what is sold in the herbshops under the name of *English rhubarb* is *R. undulatum;* but this does not appear to be accurate. (L.)

Malabar rhubarb. Plant not determined, root coarse, acrid, and very nauseous.

RUMEX. (De Cand. Bot. Gal. 400. Endl. Gen. Pl. 308.)

*RUMEX ACETOSA. (Linn.) (E. B. 127) *Acetosa, Common sorrel.*

Fl. purplish. June, July. Perennial. Meadows and pastures.

Leaves, *Acetosæ folia.* (G.) An agreeably acid plant; it acts as a refrigerant and diuretic: a decoction of the leaves may be employed in the form of a whey as a cooling and pleasant drink in febrile and inflammatory diseases. (L.)

*RUMEX ACETOSELLA. (Linn.) (E. B. 1674.) *Acetosella, Sheep's sorrel.*

Fl. reddish. May, July. Perennial. Dry pastures and heaths.

Root cooling, purges; leaves contain much oxalate of potash, very cooling, antiscorbutic, eaten in salads, make excellent whey by boiling a few in milk. (G.)

*RUMEX ACUTUS. (Linn.) (E. B. 724.) *Lapathum acutum, Oxylapathum, Sharp-pointed dock, Sharp dock.*

Fl. greenish. July. Perennial. Moist places. Common.

Root has the same qualities as foreign rhubarb, but the dose must be nearly doubled; used in powders, tinctures, and infusions, instead of rhubarb, eaten whilst young as a potherb, and used in dyeing. (G.)

RUMEX ALPINUS. (Linn.) *Monk's rhubarb.* Alps of Europe.

Root thick, fleshy, purgative like rhubarb, only in a much less degree; it was taken by Linnæus for a variety of *Rheum rhaponticum.* (L.)

RUMEX BRITANNICA. (Willd.) *R. xanthorrhiza, Water dock.* North America.

Properties similar to those of *R. acutus.*

RUMEX CRISPUS. (Linn.) (E. B. 1998.) *Lapathum crispum, Curled dock.*

Fl. greenish, with orange-coloured tubercles. June, July. Perennial. Way sides.

Seeds antidysenteric; roots bruised, and made into an ointment, cure the itch. (G.) This common weed has the reputation of being in decoction or ointment a cure for the itch; the root, which is astringent, is the part used. (L)

RUMEX HYDROLAPATHUM. (Huds.) (E. B. 2104.) *R. aquaticus, Hydrolapathum, Great water dock.*

Fl. greenish. July. Perennial. Ditches and river sides.

Properties similar to those of *R. acutus.* (G.) Root astringent, reputed antiscorbutic. (Pereira.)

*RUMEX OBTUSIFOLIUS. (Linn.) (E. B. 1999.) *Rhabarbarum monachorum, Blunt-leaved dock, Broad-leaved dock, Monk's rhubarb.*

Fl. greenish, red at the base. July. Perennial. Way sides and waste places.

Properties the same as those of *R. acutus.* (G.) Properties similar to those of *R. crispus;* the root in powder also employed as a dentifrice. (L.)

Rumex Patientia. (Willd.) *Lapathum sativum*, *Patientia*, *Garden patience.* Italy.

Properties similar to those of *R. acutus.* (G.) It is so called from the slowness of its operation as a medicine. (Loud.)

*Rumex sanguineus. (Linn.) (E. B. 1533.) *Lapathum sanguineum*, *Bloody dock*, *Bloodwort*, *Veined dock.*

Fl. greenish. July. Perennial. Shady pastures, woods, road sides. Has similar properties to those of the last species.

Rumex scutatus. (Willd.) *Acetosa Romana*, *French sorrel.*

Properties the same as those of *R. acetosella.*

Order 123.—THYMELEÆ. (De Cand. Bot. Gal. 405. Endl. Gen. Pl. 313.)

Perigone free, coloured, monopetalous, tubular, limb four (rarely five) cleft, æstivation imbricated; *stamens* definite, inserted on the fauces or tube, double the number of the segments of the perigone; *anthers* two-celled, the cells dehiscing longitudinally in the middle; *ovary* one, with a single pendulous ovule; *style*, one, often lateral; *stigma* one; *fruit* single, one-seeded, covered by the perigone, dry, or baccate; *albumen* none, or thin, fleshy; *embryo* straight; *radicle* superior, short; *cotyledons* plano-convex. *Shrubs* with simple, entire, exstipulate *leaves*; *flowers* generally hermaphrodite, sometimes by abortion diœcious.

Plants of this order are caustic, particularly their bark.

Daphne. (De Cand. Bot. Gal. 406. Endl. Gen. Pl. 330.)

Daphne cannabina. (Wall.) Nepaul.

From this shrub the *Nepaul paper* is prepared. (O'Sh.)

Daphne Cneorum. (Linn.) *Cneorum niger*, *Rock rose.* Alps.

Daphne Gnidium. (Linn.) *Thymelæa*, *Spurge flax.* South of Europe.

*Daphne Laureola. (Linn.) (E. B. 119.) *Charmed daphne*, *Laureola*, *Evergreen spurge laurel.*

Fl. yellowish green. March. Shrub. Woods and thickets.

*Daphne Mezereum. (Linn.) (E. B. 1381.) *Chamælæa*, *Laureola fœmina*, *Mezereum*, *Mezereon*, *Spurge olive.*

Fl. pink or white, fragrant. March. Shrub. Woods. Rare.

Have all similar qualities, but *D. gnidium* seems the most efficacious; bark of all these serves as a vesicatory, and ulcerates the parts to which it is applied; it has been chewed in palsy of the tongue with success; taken internally, in doses of only a few grains, it is a dangerous drastic, working both upwards and downwards; berries *Grana gnidia*, equally drastic, added to vinegar to give it apparent strength; herb used to dye yellow; both the bark and berries are steeped in vinegar, and dried to render them milder. (G.) In Germany, the bark of the stem and larger branches of *D. mezereum* is removed in spring, folded in small bundles, and dried for medicinal use; in this country, the bark of the root is employed; its taste is at first sweetish, but afterwards highly acrid; all the parts are excessively acrid, and

act as a local irritant poison. Voigt says, that it vomits and purges, and affects the urinary organs, and that death takes place from its local operation; as a local irritant Mezereon bark is employed in France under the name of *Garou*, to produce vesication; in this country, it is frequently employed as a topical application for toothache. Dr. Withering cured a case of difficulty of swallowing by Mezereon, which he directed to be chewed frequently. It has been recommended internally in venereal complaints, but it appears not to have any influence over such maladies. Dr. Cullen says, he has employed it with success in some cutaneous maladies. (L. ex Pereira.) *D. laureola* and *D. gnidium* have similar properties. (L.) In this country Mezereon is usually administered in conjunction with *Sarsaparilla*, and is employed as a sudorific and alterative in venereal, rheumatic, scrofulous, and chronic cutaneous diseases. (Pereira)

DIRCA. (Endl. Gen. Pl. 329.)

DIRCA PALUSTRIS. (Linn.) *Leatherwood.* North America.

Bark acrid, emetic, gr. v. to x.; externally produces blisters. (G.) Bark acrid; in the dose of six or eight grains it produces heat in the stomach, and brings on vomiting, especially when fresh: it sometimes acts also as a cathartic; the bark is vesicatory in a very slow degree; the fruit is narcotic, producing effects like those of *Stramonium*. (L. ex Bigelow.)

LAGETTA. (Endl. Gen. Pl. 332.)

LAGETTA LINTEARIA. (Linn.) *Daphne lagetto.* (Swartz.) *Lace bark.* Jamaica, West Indies.

Bark possesses qualities similar to that of Mezereon, and is used for the same medical purposes; it is remarkable for separating readily into a great number of thin white layers, which being stretched laterally, assume the appearance of the finest lace-work; it may even be washed with soap, like linen. (L.)

PASSERINA. (De Cand. Bot. Gal. 406. Endl. Gen. Pl. 330.)

PASSERINA TARTON RAIRI. (D. C.) *Daphne tarton rairi.* (Linn.) *Sanamunda, Heath spurge.* France.

Leaves caustic.

PASSERINA TINCTORIA.

Used to dye yellow.

ORDER 124.—HERNANDIACEÆ. (Endl. Gen. Pl. 332. (*Daphnoideis affinia.*) Lindl. Nat. Syst. 195.)

Flowers monœcious, or hermaphrodite, with a calycine involucre to the females, or hermaphrodites; *calyx* petaloid, inferior, tubular, 4—8 parted, deciduous; *stamens* definite, inserted into the calyx in two rows, of which the outer is often sterile; *anthers* bursting longitudinally; *ovary* superior, one-celled; *ovule* pendulous; *style* one or none; *stigma* peltate; *drupe* fibrous, one-seeded; *seed* solitary, pendulous; *embryo* without albumen, inverted; *cotyledons* somewhat lobed, shrivelled, oily. *Trees; leaves* alternate, entire; *spikes*, or *corymbs*, axillary or terminal.

HERNANDIA. (Endl. Gen. Pl. 332.)

HERNANDIA OVIGERA. (Willd.) *American myrobalans.* East Indies.

Fruit astringent.

HERNANDIA SONORA. (Linn.) *Jack in a box.* East and West Indies.

Fruit astringent ; seeds oily, purgative. (G.) The bark, seeds, and young leaves purgative. Rumph says that the fibrous roots, chewed and applied to wounds caused by the Macassar poison, form an effectual cure ; the juice of the leaves is a powerful depilatory ; it destroys hair wherever it is applied without pain. (L.) The fruit is a nut, which is very large, and as they move in the wind produce sound enough to alarm unwary travellers. (Lou.)

ORDER 125.—LAURINEÆ. (De Cand. Bot. Gal. 407. Endl. Gen. Pl. 315.)

Perigone free, monosepalous, persistent, six-cleft, or six-parted, imbricated in æstivation ; *stamens* inserted at the base of the segments, either six in a single row, or 9—12 in a double row ; *anthers* adnate to the filaments, dehiscing from the base to the apex ; *ovary* one ; *style* one ; *stigma* simple, or divided ; *drupe* or *berry* one-celled, one-seeded ; *albumen* none ; *embryo* straight ; *radicle* superior. *Trees*, or *shrubs*, with alternate *leaves*, and hermaphrodite or (by abortion) diœcious *flowers*.

Very aromatic fruits, or berries oily and odoriferous.

ACRODICLIDIUM. (Nees.)

ACRODICLIDIUM CAMARA. (Schomb.) *Camara tree.* South America.

The fruit, *American nutmegs*, *Camacou. Ackawai*, or *Waccawai nutmegs*, brought by the Waccawai Indians to the coast of British Guiana, where they are much esteemed as a remedy in dysentery, diarrhœa, &c. Dr. Hancock has mentioned them as one of the most efficacious remedies in the above complaints, as well as for spasmodic pains.

AGATHOPHYLLUM. (Endl. Gen. Pl. 318.)

AGATHOPHYLLUM AROMATICUM. (Juss.) *Evodia.* (Gaertn.) *Ravensara.* (Sonnerat.) Madagascar.

The leaves and fruit have a smell resembling cloves. An oil the same as that of cloves was obtained from the leaves by Vauquelin. The fruit, *Ravensara nuts*, or *clove nutmegs*, resemble cloves in properties, and are substituted for them. They are about the size of a common nut, of a blackish colour, and smooth on the outside. (Mérat and De Lens.)

AYDENDRON. (Endl. Gen. Pl. 319.)

AYDENDRON CUJUMARY. (Nees.) *Ocotea cujumary.* (Mart.) Brazil.

Seeds aromatic ; their oily cotyledons are employed in powder, mixed with wine or water, in cases of indigestion. (L.)

AYDENDRON LAUREL. (Nees.) *Ocotea pichurim.* (Humb.) South America.

This plant is supposed by Humboldt to produce the *Pichurim*, or *Puchury beans*, once celebrated for their febrifugal power, and it appears that both the species here mentioned possess similar properties ; by Martius they are assigned to *Nectandra puchury* ; these beans were imported from Brazil into Stockholm, in the middle of the last century, and were found a valuable tonic and astringent medicine ; during the

continental war, they were used as a bad substitute for nutmegs; they are now obsolete. (L.)

BENZOIN. (Endl. Gen. Pl. 322.)

BENZOIN ODORIFERUM. (Nees.) *Laurus benzoin.* (Linn.) *L. pseudo benzoin.* (Michx.) *Fever wood, Spice berry, Spice wood.* United States.

Bark used for *Cinnamon.* (G.) Bark highly aromatic, stimulant, and tonic; given in decoction or powder in intermittents; an infusion of the twigs is vermifuge; oil of the berries, which are aromatic, a stimulant; these berries are said to have been used in the United States, during the American war, as a substitute for allspice. (G.)

CAMPHORA. (Endl. Gen. Pl. 316.)

CAMPHORA OFFICINARUM. (Nees.) *Cinnamomum camphora.* (Nees.) *Laurus camphora.* (Linn.) *Camphor tree.* Japan and China.

Roots yield *Camphor* by distillation. (G.) *Chinese camphor* is obtained from the wood, branches, and leaves, by dry distillation; it is a kind of *Stearoptine* remaining after the *Elœoptine* or Æthereal oil of the live tree is evaporated. (Nees.) The *Camphor* of commerce is chiefly produced in the island of Formosa, and brought by the Chinchew junks in very large quantities to Canton, whence foreign markets are supplied. (L. ex Reeves.) Camphor is a valuable stimulant, especially in typhoid fevers; in large doses narcotic; it is also much used as an external application. (O'Sh.) It has been employed in fever, inflammatory diseases, small-pox, mania, and other forms of mental disorder, spasmodic affections, chronic rheumatism, gout, and cholera, and in cases of poisoning by opium, &c. (Pereira.)

CARYODAPHNE. (Endl. Gen. Pl. 318.)

CARYODAPHNE DENSIFLORA. (Blume.) *Kiteja* or *Kitedja.* Java.

Bark brownish, tonic, containing a great quantity of bitter, somewhat balsamic, extractive matter; leaves gratefully aromatic; they are used in infusion, like tea, against spasms of the bowels, and the convulsions of pregnant women. (L. ex Blume.)

CINNAMOMUM. (Endl. Gen. Pl. 316.)

CINNAMOMUM AROMATICUM. (Nees.) *C. cassia.* (Blume.) *Laurus cassia.* (Hort. Kew.) *Laurus cinnamomum.* China.

According to Nees von Esenbeck, this plant furnishes the valuable *Chinese cinnamon;* the agreeable, but powerfully aromatic flavour and odour of the bark does not, however, seem to exist also in the leaves, for they, in the stoves of Europe at least, are almost insipid, mucilaginous, and somewhat astringent, with no taste of either cinnamon or cloves. (Nees.) *Cassia bark* is supposed by some to come from this, but Mr. Marshall asserts that it is only a coarse cinnamon, obtained from the thick roots or large branches of the cinnamon tree. (L.) Two substances are believed to be obtained from this species; namely, the bark called *Cassia-lignea,* and the flower buds termed *Cassia buds.* (Pereira.)

CINNAMOMUM CULILAWAN. (Blume.) *Laurus culilawan,* (Linn.) Amboyna.

Bark, *Culilawan*, *Cortex caryophylloides*, brownish-red, flat, thick, odour between clove bark and sassafras; leaves resemble those of *Raventsara;* both are healing, stimulant, and stomachic. (G.) Bark, when rubbed, aromatic like cloves, but less pungent, and sweeter when chewed, rather bitter and mucous; this is the tree that yields the true *Culilawan bark;* Pereira says, "*Culilawan bark* is an aromatic stimulant like cassia, with some astringency, and a flavour of cloves; it owes its medicinal activity to a combination of volatile oil, resin, and bitter extractive; it is useful as a carminative, and stomachic in dyspeptic complaints, especially when given in combination with the bitter tonics; it has been used in atonic gout, in old diarrhœas, &c.; the dose of it in substance is from ten grains to half a drachm; the tincture of the Wirtemburg Pharmacopœia is prepared by digesting four ounces of bark in a pint and a half of spirit; the dose is one or two fluid drachms; the oil prepared by distillation may be used as the oils of cloves, cassia, &c.; the natives of Amboyna employ it internally in paralysis of the bladder, and externally as a stimulating liniment in contusions, paralysis, and arthritic complaints." It appears from the investigations of Blume, that the *Culilawan bark* of the shops consists of a mixture of several Indian barks, especially those of *C. sintoc*, *Javanicum*, and *Xanthoneurum*, a confusion of no importance, as they are all alike in properties. (L.) This is one of the varieties of *Clove bark*, namely, that in flat pieces.

CINNAMOMUM JAVANICUM. (Blume.) *Laurus malabrathum.* Java, Borneo.

Bark a deep cinnamon-brown, more bitter than *Culilawan bark*, and the leaves, when rubbed, have a very sharp aromatic odour; Blume says this bark deserves the serious attention of medical men, on account of its powerful effects in spasmodic colic, and the after-pains attending parturition (L.)

CINNAMOMUM KIAMIS. (Nees.) *C. Burmanni.* (Blume.)

Said to produce one of the sorts of *Massoy bark*, the *cortex oninus* of Rumphius, but according to Blume, that article is not furnished by any species of cinnamon. (L.)

CINNAMOMUM LOUREIRII. (Nees.) *Laurus cinnamomum.* (Lour.) *Nikei.* (Japan.) *Kio kui.* (Chinese.) Cochin China, Japan.

The *Flowers of cassia*, or *cassia buds*, are produced by this species; according to Loureiro, the old and young branches are equally worthless, but the middle-sized shoots furnish a bark about a line thick, of the best quality, superior to that of Ceylon, and sold at a much higher price. (L.) For *Cassia buds*, see *Cinnamomum aromaticum.*

CINNAMOMUM NITIDUM. (Hook.) *Laurus malabathrica.* (Roxb.) *Cinnamomum eucalyptoides.* (Nees.) India, Ceylon, Java.

This is the plant which furnished the principal part of the *Folia malabathri* of the old pharmacologists, a mixture of the leaves of several species of cinnamon, and once used as an aromatic substitute for cinnamon. (L.)

CINNAMOMUM RUBRUM. (Blume.) *Laurus caryophyllus.* (Lour.) Amboyna, &c.

Bark similar to that of *C. culilawan*, and hardly inferior; Loureiro says it contains much more essential oil than that of cinnamon, and smells of cloves, but is not so agreeable. (L.)

CINNAMOMUM SINTOC. (Blume.) Nilgherry mountains, Java.

Bark in quality very like that of the true *Culilawan;* aromatic in the same degree, but less agreeable, and with a more bitter after-taste; it is also drier and more powdery when chewed; the smell, moreover, is less agreeable, not so purely that of cloves, but with a strong odour of nutmegs.

CINNAMOMUM TAMALA. (Nees.) *Tai, Tadsch*, or *Tedsch*. Continent of India.

Taste of the dried leaves warm, aromatic at first, like cinnamon, afterwards like cloves mixed with camphor: their leaves are sold under the name of "*Folia malabathri, Tamala pathri*, or *Indi*," in the shops, according to Nees Von Esenbeck, but Blume says he never found this in any samples he examined, although the latter are always mixed up of various species. (L.)

CINNAMOMUM XANTHONEURON. (Blume.) Papuan Islands and Moluccas.

A kind of *Culilawan bark* of great fragrance, clove scented, and more pungent than the true sort when fresh, but losing its quality by time; it is so extremely like *Massoy bark* as to be confounded with it, although the latter is not the produce of any cinnamon, according to Blume. (L.)

CINNAMOMUM ZEYLANICUM. (Nees.) *Laurus cinnamomum*. (Linn.) *L. cassia*. (Bot. Mag.) Ceylon, Java.

This is the true *Ceylon cinnamon*, furnishing bark of the best quality; it varies, however, according to the season of the year in which it is collected; it is the plant usually called *Laurus cassia* in the gardens, where also it is sometimes found under the name of *Laurus cinnamomum*, and *Cinnamomum aromaticum*. The *Laurus cassia* (Linn.), the plant that produces the *Cassia lignea*, is regarded by Nees von Esenbeck as a degenerate variety of *C. zeylanicum*, palmed off upon foreigners as true cinnamon by the Dutch when they held Ceylon, and thus carried to the continent of India, where it has naturalized itself. (L.)

CRYPTOCARYA. (Endl. Gen. Pl. 318.)

CRYPTOCARYA MOSCHATA. Brazil.

Yields *Brazilian nutmegs*.

CRYPTOCARYA PRETIOSA. (Mart.) Brazil.

The bark has a strong smell of cinnamon. It assumes a blackish colour when exposed to the air, but is red when freshly broken. (Guib.)

DICYPELLIUM. (Endl. Gen. Pl. 320.)

DICYPELLIUM CARYOPHYLLATUM. (Nees.) *Persea caryophyllacea*. (Mart.) *Licaria guianensis*. (Aubl.) *Bois de rose*. Brazil.

Bark smelling of cloves, with a hot clove-like peppery taste, and powerful tonic properties; Nees von Esenbeck inquires whether this may not be the *Linharea aromatica, Canella do mato*. (L.) This is

said to be the source of the *clove bark*, *Brazilian clove bark*, or *Clove cassia bark*, which occurs in quilled pieces.

LAURUS. (De Cand. Bot. Gal. 407. Endl. Gen. Pl. 323.)

LAURUS CAUSTICA. L. FŒTENS, (Willd.) L. GLOBOSA, L. PARVIFLORA.

Barks contain an acrid principle.

LAURUS JAPONICA.

Leaves sold for *Folium indicum*, but very different in taste.

LAURUS MYRRHA. *L. cassia.*

Leaves bitter, narrow pointed, eliptical, sold for *Folium indicum.*

**LAURUS NOBILIS. (Linn.) *Laurus Bay tree, Sweet bay.*

Fl. yellowish, June. Small tree. Native of south of Europe.

Berries, *Lauri baccæ*, very heating and emmenagogue; yield oil by decoction or by the press; leaves, *Lauri folia*, aromatic, prepared by soaking in vinegar and drying. (G.) Leaves and fruit both aromatic; the latter enters into the composition of the *Emplastrum cumini* of the London Pharmacopœia; the fixed oil is sometimes employed externally as a stimulant. (L.) Water distilled from the leaves shows traces of prussic acid, and it is probably on this component that their medicinal and poisonous properties depend; leaves, berries, and oil, are narcotic and carminative. (Lou.) Berries, leaves, and oil, said to possess aromatic, stimulant, and narcotic properties; leaves in large doses prove emetic; leaves and berries used to strengthen the stomach, expel flatus, and to promote the catamenial discharge; the fixed oil has been used externally to relieve colic, in paralysis of the extremities, and against deafness. It is also employed in spasms and bruises. (Pereira.)

LAURUS PIPERITA. *Litsæa cubeba.*

Berries carminative.

MESPILODAPHNE. (Endl. Gen. Pl. 319.)

MESPILODAPHNE PRETIOSA. (Nees.) *Laurus Quixos.* (Lamb.) *Peruvian cinnamon, Pao*, or *Casca pretiosa.* South America.

Bark aromatic, astringent. (G.) Inner bark and rind of the calyx of a most sweet odour and agreeable taste, resembling cinnamon mixed with orange flowers, or oil of bergamot. (L.)

NECTANDRA. (Endl. Gen. Pl. 319.)

NECTANDRA CINNAMOMOIDES. (Nees.) *Laurus cinnamomoides.* (H. B. et Kunth.) *Cinnamomum sylvestre Americanum.* South America.

Bark with the flavour and smell of cinnamon, for which it is used in New Grenada. (L.)

NECTANDRA CYMBARUM. (Nees.) *Ocotea cymbarum.* (H. B. et Kunth.) South America.

Bark aromatic, bitter, stomachic; Martius suspects that it is one of the ingredients in the famous *Woorary poison* of Guiana. (L.)

NECTANDRA PUCHURY MAJOR. (Nees.) *Ocotea puchury.* (Mart.) *Puchury, Pachyry.* Brazil.

Martius assigns the *Pichurim beans* to this plant; (see *Aydendron*

laurel ;) the fruit in the early months of the year drop from their cups to the ground, when they are collected by the natives, cleaned of their flesh and pericarp, and dried by a gentle heat; they are used in dysentery, diarrhœa, cardialgia, spasmodic colic, strangury, incontinence of urine, and other disorders; the bark has the smell of fennel mixed with cloves, according to Nees; of camphor, according to Martius; its taste is aromatic, not hot. (L.) Another species, the *N. puchury minor* of Nees, is said to yield seeds having similar qualities; its bark is described as resembling *Sassafras* when fresh, but tasteless and scentless when dry; the cotyledons smell like Balsam of Peru; it yields the *Sassafras nuts* of the London shops, according to Humboldt. (L.) *Laureaster amboynensis, Tetranthera pichurim ;* seeds, *Sassafras nuts, Brazilian bean, Faba pichurim*, stomachic, astringent, anodyne, used in diarrhœa and dysentery, yield oil. (G.)

NECTANDRA RODIÆI. (Schomb.) *Bebeeru tree, Greenheart tree, Sipeira, Bibiru.* British Guiana.

The wood, which is heavy, solid, and very permanent, is much esteemed, and fetches a higher price than most other timber. *The bark* has been brought into European notice by Mr. Rodie, as a valuable tonic in cases of intermittent fever. An alkaloid has been obtained from it by Dr. Maclagan of Edinburgh, which he calls *Beberine.*

OREODAPHNE. (Endl. Gen. Pl. 321.)

OREODAPHNE CUPULARIS. (Nees.) *Laurus cupularis.* (Lamb.) *Bois de canelle, Isle of France cinnamon.* Isles of France, Bourbon, &c.

Bark aromatic, astringent. (G.) Wood strong scented, the cinnamon of the Isle of France. (L.)

OREODAPHNE OPIFERA. Oronoko.

Yields large quantities of volatile oil, on making incisions through the bark of the tree. The fruit also yields a fragrant volatile oil on distillation; used in Brazil for pains in the limbs, &c., under the name of *Canella de cheiro.*

PERSEA. (Endl. Gen. Pl. 317.)

PERSEA GRATISSIMA. (Gaertn.) *Laurus Persea.* (Linn.) *Avocado pear.* Tropical America.

Fruit yields oil. (G.) The fruit, *Alligator pear*, or *Avocado pear*, abounds in a fixed oil of a buttery substance, and is much esteemed as a dessert fruit in the West Indies; the leaves are reckoned balsamic, pectoral, and vulnerary; the seeds are very astringent. (L.)

PERSEA INDICA. Madeira.

Yields an inferior kind of *Mahogany*, called *Vinatico.*

PLEGORHIZA. (Endl. Gen. Pl. 1328. *Genera Dubiæ sedis.*)
(Lindl. Nat. Syst. 526, appendix; to be added to those genera imperfectly known, and not yet referred to any natural order.)

PLEGORHIZA ASTRINGENS.

Root vulnerary, astringent.

SASSAFRAS. (Endl. Gen. Pl. 322.)

SASSAFRAS OFFICINALE. (Nees.) *Laurus sassafras.* (Linn.) *Sassafras tree.* North America.

Roots, *Sassafras radix;* wood, *Cinnamon wood, Sassafras lignum,* imported from the West Indies in logs; sudorific, heating, and drying; yields essential oil. (G.) The bark of the root, which is thick and blood-red, contains a great quantity of essential oil; it has a high reputation as a powerful sudorific, and combined with *Guaiacum* and *Sarsaparilla,* in cutaneous affections, chronic rheumatism, and old syphilitic maladies; the dried leaves contain so much mucilage, that they are employed in Louisiana for thickening soup, like *Hibiscus esculentus;* the bark of the branches, as well as of the wood, have been employed, but they are inferior to the bark of the root. (L.)

SASSAFRAS PARTHENOXYLON. (Nees.) *Laurus parthenoxylon.* (Jack.) *L. porrecta.* (Roxb.) *L. pseudo sassafras.* (Blume.) *Virgin tree, Oriental Sassafras.* Java.

The fruit has a strong balsamic smell, and yields an oil considered useful in rheumatic affections; an infusion of the root is drunk as sassafras, and with similar effects. (L.)

TETRANTHERA. (Endl. Gen. Pl. 322.)

TETRANTHERA ROXBURGHII. (Nees.) *Litsea sebifera.* (Pers.) *Sebifera glutinosa.* (Lour.) *T. apetala.* (Roxb.) East Indies.

Berries yield oil. (G.) The fruit yields a greasy exudation, from which the Chinese manufacture candles of bad quality, and which serves as the basis of salves; the leaves and branches are full of a glutinous matter, which is readily communicated to water in which they are bruised. (L.) The wood is the *Mueda lukree* of the Hindostanee druggists, and a favourite application to bruises and wounds. It is somewhat fragrant and slightly balsamic and sweet. (O'Sh.)

ORDER 126.—MYRISTICEÆ. (Endl. Gen. Pl. 829. Lind. Nat. Syst. 15.)

Flowers completely unisexual; *calyx* trifid, rarely quadrifid, with valvular æstivation; *flowers* male; *filaments* either separate, or completely united in a cylinder; *anthers* 3—12, two-celled, turned outwards, and bursting longitudinally, either connate or distinct; female; *calyx* deciduous; *ovary* superior, sessile, with a single seed, nut-like, enveloped in a many-parted aril; *albumen* runcinate, between fatty and fleshy; *anthers* small; *cotyledons* foliaceous; *radicle* inferior; *plumule* conspicuous. *Tropical trees,* often yielding a red juice, with alternate, exstipulate *leaves,* and axillary or terminal *inflorescence,* in racemes, glomerules, or panicles.

MYRISTICA. (Endl. Gen. Pl. 829.)

MYRISTICA OFFICINALIS. (Linn.) *M. aromatica.* (Lamb.) *M. moschata.* (Thunb.) *Nutmeg tree.* Moluccas.

The kernel of the fruit *Nutmeg, Nux Moschata, Myristicæ nuclei, Myristicæ moschatæ fructus nucleus;* membrane enclosing the seed, *Mace, Macis,* are stomachic, cephalic, uterine, and cordial; in an overdose, say ʒ ij., the nutmeg is soporific, and produces delirium; by distillation it yields an essential oil, and by expression a concrete oil. (G.)

The seed is the nutmeg of the shops, the aril is the mace; they contain a volatile oil, which renders them stimulant; in small quantities they relieve flatulence and allay colicky pains, but in large quantities they excite the circulation, and act as narcotics. (L. ex Pereira.)

MYRISTICA SEBIFERA. *Virola sebifera, Burabee, Dali.* Cayenne.
Kernels pressed for their oil. (G.) Seeds, when boiled with water, give out a large quantity of a fixed oil, used for making candles; an acrid juice also exudes from the bark, which is employed as a popular medicine. (O'Sh.)

MYRISTICA TOMENTOSA. *Male nutmeg tree.* Moluccas.
Very inferior to the true *nutmeg*, and of but little commercial value. (O'Sh.)

ORDER 127.—PROTEACEÆ. (Endl. Gen. Pl. 336. Lindl. Nat. Syst. 197.)

Calyx four-leaved or four-cleft, with a valvular æstivation; *stamens* four, sometimes in part sterile, opposite the segments of the calyx; *ovary* simple, superior; *style* simple; *stigma* undivided; *fruit* dehiscent or indehiscent; *seed* without albumen; *embryo* with two, occasionally several; *cotyledons* straight; *radicle* inferior. *Shrubs*, or *small trees*; *branches* usually umbellate; *leaves*, hard, dry, divided or undivided, opposite or alternate, without stipules, their cuticle often covered equally, or on both sides, with stomates.

GUEVINIA. (Endl. Gen. Pl. 340.)

GUEVINIA AVELLANA. *Quadria heterophylla.* South America.
Kernels esculent, very pleasant. (G.) Fruit sold like nuts in the markets of Chili, under the name of *Avellano*. (L.)

PERSOONIA. (Endl. Gen. Pl. 340.)

PERSOONIA GUAREOIDES.
Bark used for the Peruvian bark; nuts yield oil. (G.)

PERSOONIA HIRSUTA. (Brown.) New South Wales.

PERSOONIA LANCEOLATA. (Brown.) *Linkia lævis.* New South Wales.

PERSOONIA LINEARIS. (Brown.) New South Wales.

PERSOONIA SALICINA. (Brown.) *P. laurina.*
Fruits esculent.

PROTEA. (Endl. Gen. Pl. 337.)

PROTEA GRANDIFLORA.
Employed as an astringent in diarrhœa. (O'Sh.)

PROTEA MELLIFLORA.
Flowers yield a saccharine liquid, employed in diseases of the chest. Several species are also used in tanning leather. (O'Sh.)

ORDER 128.—SANTALACEÆ. (De Cand. Bot. Gal. 408. Endl. Gen. Pl. 324.)

Perigone adhering to the ovary, 4—5 cleft, somewhat coloured, æstivation valvate; *stamens* 4—5, inserted into the base of the segments of the perigone, and opposite to them; *ovary* one-celled, 2—4 seeded; *ovules* pendulous, attached to the top of the

central placenta; *style* one, often lobed; *fruit* one-seeded, nucamentaceous, or drupaceous; *albumen* fleshy; *embryo* inverted, round. *Herbs,* or *shrubs* with alternate, or nearly opposite, undivided, exstipulate *leaves*; *flowers* small, subspicate, rarely umbellate or solitary.

MIOSCHILOS. (Endl. Gen. Pl. 327.)

MIOSCHILOS OBLONGA. Chili.

Leaves used for those of *Senna.*

OSYRIS. (De Cand. Bot. Gal. 408. Endl. Gen. Pl. 326.)

OSYRIS ALBA. (Linn.) *Osyris, Cassia veterum spuria, Poet's rosemary.* South Europe.

SANTALUM. (Endl. Gen. Pl. 327.)

Two species of this genus yield the *Sandal wood* of commerce, a kind of timber much esteemed for its fragrance; "it is made into musical instruments, cabinets, and curious boxes, for which it is valued, as no insect can exist, it is said, nor iron rust, within its influence; it is used in the eastern countries as an incense. *White sandal wood* is the young timber, *Yellow sandal wood* the old; it is considered by the native doctors of India as sedative and cooling; it is also used by the French apothecaries; its oil is said to be used to adulterate oil of roses. (L.) Sandal wood in powder is given by the native physicians in ardent remitting fevers; with milk it is also prescribed in gonorrhœa; rubbed on the skin, it is said to allay the irritation of musquito bites, of prickly heat, and other cutaneous disorders. (O'Sh.)

SANTALUM FREYCINETIANUM. (Gaud.) Sandwich Islands.

Said to produce sandal wood. (L.)

SANTALUM MYRTIFOLIUM. (Spreng.) *S. album.* (Linn.) *Sirium myrtifolium, Sandal tree.* East Indies.

The outside of the wood *White sanders, Santalum album;* the heart of the tree, *Yellow sanders, Santalam citrinum;* aromatic, slightly bitter and sweetish, cordial, cephalic. (G.) This is the shrub with which the Portuguese are reported to drive, or to have driven a great trade. The *Sandal wood* of Malabar is from the same species, but is considered of better quality. (L.)

SANTALUM PANICULATUM. (Hook.) Owhyhee, on the volcano.

This is unquestionably the *Sandal wood* of Owhyhee, as was ascertained by the late Mr. Macrae. (L.)

Sandal tree of Tecumez, yields resin; leaves rubbed between the hands, and applied to the temples, used to take off the headache occasioned by severe drinking. (G.)

THESIUM. (De Cand. Bot. Gal. 408. Endl. Gen. Pl. 325.)

*THESIUM LINOPHYLLUM. (Linn.) (E. B. 247.) *Bastard toad flax.*

Fl. white. July. Perennial. Chalky pastures.

Astringent.

ORDER 129.—ELEAGNEÆ. (De Cand. Bot. Gal. 409. Endl. Gen. Pl. 333.)

Flowers dicœcious, rarely hermaphrodite; *male fl.* subamentiform, with 3—4—8 *stamens; anthers* introrse, subsessile, bilocular; *female fl. perigone,* tubular, monose-

palous, persistent, limb entire, or 2—4 cleft, the fauces sometimes crowned with a prominent glandular disk (except in Hippophae); *ovary* arising from the bottom of the perigone, and not united with it, one-celled, one-ovuled; *ovule* ascending, subpedicellated; *style* very short; *stigma* tongue-shaped; *fruit* crustaceous, enclosed within the pulpy perigone; *seed* erect; *albumen* fleshy, thin; *embryo* straight; *radicle* inferior; *cotyledons* flat, fleshy. *Trees*, or *shrubs*, with alternate, or opposite, entire, exstipulate *leaves*.

ELÆAGNUS. (De Cand. Bot. Gal. 409. Endl. Gen. Pl. 334.)

ELÆAGNUS ANGUSTIFOLIA. (Linn.) *Narrow-leaved wild olive.* France.

Vermifuge.

HIPPOPHAE (De Cand. Bot. Gal. 409. Endl. Gen. Pl. 334.)

*HIPPOPHAE RHAMNOIDES. (Linn.) (E. B. 425.) *Sallow thorn, Sea buckthorn.*

Fl. brown, spotted. May. Shrub. East and south-east coast.

Leaves purgative; berries made into a sauce.

ORDER 130.—ARISTOLOCHIEÆ. (De Cand. Bot. Gal. 410. Endl. Gen. Pl. 344.)

Flowers hermaphrodite; *perigone* adhering to the ovary, monosepalous, limb either three-lobed or tubular, dilated irregularly in the upper part, æstivation valvate; *stamens* definite, in ternary numbers, either free and distinct, or epigynous, adhering to the style and stigma; *ovary* 3—6 celled; *style* short; *stigma* divided; *capsule* or *berry* coriaceous, six-celled, many-seeded, placentas lateral; *embryo* small, at the base of a cartilaginous albumen. *Herbs*, or *shrubs*, generally climbing, with alternate, simple, petiolated *leaves*.

The plants of this order are emmenagogue.

ARISTOLOCHIA. (De Cand. Bot. Gal. 410. Endl. Gen. Pl. 344.)

ARISTOLOCHIA ANGUICIDA. (Linn.) Carthagena.

The juice of the root chewed and introduced into the mouth of a serpent so stupifies it, that it may for a long time be handled with impunity; if the reptile is compelled to swallow a few drops, it perishes in convulsions; the root is also reported to be an antidote to serpent bites. (L. ex. Jaquin.)

ARISTOLOCHIA BRACTEATA. (Retz.) Coast of Coromandel.

Every part nauseously bitter; in India, for a purging with gripes, two of the fresh leaves are rubbed up with a little water, and given to an adult for a dose, once in twenty-four hours. (Roxb.) An infusion of the dried leaves is given as an anthelmintic; fresh bruised, and mixed with castor oil, they are considered a valuable remedy in obstinate cases of itch. (L.)

*ARISTOLOCHIA CLEMATITIS. (Linn.) (E. B. 398.) *Birth wort, Upright birth wort.*

Fl. pale yellow. July, August. Perennial. Among ruins in the south of England.

Root emmenagogue. (G.) Roots powerfully stimulating; when

fresh they have a very disagreeable smell; they have been chiefly employed as aids to difficult parturition. (L.)

ARISTOLOCHIA CYMBIFERA. (Mart.) *A. ringens.* (Mart.) *A. grandiflora.* (Gomez.) South America.

Root has a very penetrating, disagreeable smell, and a strong, bitter aromatic taste; produces almost entirely the same effects as the Virginian snake root. (*A. serpentaria.*) It is very frequently used in Brazil against ulcers, paralytic affections of the extremities, dyspepsia, impotentia virilis, in nervous and intermitting fevers, especially those in which a predominant disorder of the pituitous membrane, or of the whole lymphatic system has been observed, and lastly, against the bites of serpents. According to Gomez, the powdered root is given in doses of a scruple, from four to six times a day; the decoction is ordered in doses of four to six ounces, and the juice expressed from the leaves, in doses of one or two drachms daily. (L. ex Martius.)

ARISTOLOCHIA FRAGRANTISSIMA. (Ruiz.) *Star reed.* Peruvian Andes.

Stems, when stripped of their bark, resemble cords, and are employed in Peru as ropes; the Peruvian Indians use it as a remedy for dysenteries, malignant inflammatory fevers, colds, rheumatic pains, and various diseases arising from fatigue; antiseptic, odontalgic, sudorific; flavour bitter, camphorous, balsamic; the Indians also apply it powdered, or fresh bruised, to the bites and stings of reptiles and insects, as a powerful antidote to their poison. (L. ex Ruiz.)

ARISTOLOCHIA GRANDIFLORA. (Swartz.) Jamaica.

The whole plant emits a powerful narcotic, unpleasant smell; Swartz says it is poisonous to hogs. (L.)

ARISTOLOCHIA INDICA. (Linn.) East Indies.

Root nauseously bitter; the Hindoos suppose it to possess emmenagogue and antarthritic virtues. (L.)

ARISTOLOCHIA LONGA. (Linn.) *Long-rooted birth wort.* South of Europe.

ARISTOLOCHIA ROTUNDA. (Linn.) *Round birth wort.* South of Europe.

Roots taken to ʒ iss., hot, odorous, powerfully incisive. (G.)

ARISTOLOCHIA BŒTICA. (Linn.) Spain.

ARISTOLOCHIA PALLIDA (Willd.) Italy.

ARISTOLOCHIA SEMPERVIRENS. (Linn.) Candia.

The five foregoing species are slightly aromatic, stimulating tonics, useful in the latter stages of low fever; the taste is bitter and acrid; the odour strong and disagreeable; they are said to be sudorific, and have been employed as emmenagogues in amenorrhœa; they are supposed to be the plants with which the Egyptian jugglers stupify the snakes they play with. (L.)

ARISTOLOCHIA MACROURA. (Gomez) *Jarrinha.* Brazil.

Root and herb similar in their effects to those of *A. cymbifera*, but more potent. (L.)

ARISTOLOCHIA ODORATA. *Jamaica contrayerva.* West Indies.

Root in infusion diuretic, purgative, stomachic, and emmenagogue. (G.)

ARISTOLOCHIA PISTOLOCHIA. (Willd.) South of Europe.

Root emmenagogue.

ARISTOLOCHIA SERPENTARIA. (Linn.) *Serpentaria Virginiana, Virginia snake root.* United States.

Root, *Serpentariæ radix*, antiseptic, heating, alexiterial, diaphoretic; given in doses of gr. x. to ʒss. of the powder, or an infusion of ʒj. every four hours, against the bites of snakes and canine madness; imported from America in bales of 200 to 500 lbs., frequently mixed with the roots of *Collinsonia præcox;* the root has a penetrating resinous smell, and a pungent bitter taste; it acts as a stimulant tonic and diaphoretic, and in certain cases as an antispasmodic and anodyne: it is peculiarly useful in supporting the strength, and in allaying the irregular action which attends great febrile debility; Dr. Chapman considers "it admirably suited to check vomiting, and to tranquillize the stomach," particularly in bilious cases.

ARISTOLOCHIA TRILOBATA. (Linn.) *A. trifida.* (Lamb.) West Indies.

Reported to be an antidote to the bites of serpents; if taken in doses of from 6—20 grains, it is a sudden and powerful sudorific. (L.)

ASARUM. (De Cand. Bot. Gal. 411. Endl. Gen. Pl. 344.)

*ASARUM EUROPÆUM. (Linn.) (E. B. 1083.) *A. vulgare, Asarabacca.*

Fl. purplish brown. May. Perennial. North of England.

Root a drastic purge, in doses of ℈j. to ʒj.; it is also used as a sternutatory, from gr. j. to gr. iij.; leaves, *asari folia*, milder; were the usual emetic before the introduction of *ipecacuanha*, six to nine leaves taken in whey; they were also applied to wounds. (G.) The powdered leaves are used to provoke sneezing; a few grains at a time may be safely used, and they produce a considerable discharge of fluid by the nostrils. (Smith.) Roots purgative, emetic, and diuretic; called *cabaret* in France, because, as it is said, drunkards use it to produce vomiting. (L.)

ASARUM CANADENSE. (Linn.) *Canada snake root, Wild ginger.* North America.

Root, *Asarum, P. U. S.*, mixed with those of Virginian snake root, and has the same qualities. (G.) Rhizoma agreeably aromatic, very unlike that of A. Europæum; a warm stimulant and diaphoretic, acting like *Aristolochia serpentaria:* not emetic, as has been asserted. (L.)

ASARUM VIRGINICUM. (Willd.) *Serpentaria nigra Black snake weed.* Virginia.

Roots employed as those of *A. canadense.* (G.)

ORDER 131.—EUPHORBIACEÆ. (De Cand. Bot. Gal. 491. Endl. Gen. Pl. 1107.)

Flowers monœcious, or diœcious; *perigone* monosepalous, the segments definite, sometimes more, very often increased within by various squamiform or glandular ap-

pendages: *male flower; stamens* indefinite, or generally definite, sometimes inserted into the centre of the flower, beneath the rudiments of the pistil; *anthers* two-celled, the cells sometimes distinct, dehiscing longitudinally on the outer side: *fem. flower; ovary* superior, sessile, or stipitate; 2—3, or many-celled, cells disposed in a circle about a central placenta; *ovules* solitary, or in pairs, suspended beneath the apex from the inner angle; *style*, as many as the cells, distinct, united or none; *stigmas* compound, or many lobed; *capsules* of 2—3 cells; the cells bursting elastically, bivalved; *seeds* solitary, or in pairs, with an aril, annexed above to the central placenta: *embryo* surrounded by a fleshy albumen; *cotyledons* flat; *radicle* superior. *Herbs* or *shrubs*, generally lactescent; *leaves* mostly alternate, stipulate, very rarely opposite; *flowers* axillary, or terminal, with bracts, or with an involucre.

The milky juice is caustic, nauseous, and purgative; embryo or corculum of the seeds usually violently emetic or purgative.

ACALYPHA. (Endl. Gen. Pl. 1111.)

ACALYPHA INDICA. (Linn.) *Cupameni.* East Indies.

Root bruised in hot water cathartic; decoction of leaves laxative. (L.)

ALCHORNEA. (Endl. Gen. Pl. 1113.)

ALCHORNEA LATIFOLIA. (Swartz.) Jamaica.

Bark, *Alcornocco cabarro*, in thick, flat, long pieces, rather spongy, reddish yellow, covered with yellowish lichens; from Jamaica; used in phthisis, ℈j. in powder, or in decoction. (G.) Nees and Ebermaier refer the *Alcornoco bark* to this plant, but it appears upon Humboldt's authority to be the produce of Bowdichia. (L.)

ALEURITES. (Endl. Gen. Pl. 1114.)

ALEURITES TRILOBA. *Country walnut.* East Indies.

An oil termed *Dessyakhroot* is obtained from this plant.

ANDA. (Endl. Gen. Pl. 1113.)

ANDA GOMESII. (Jussieu.) *Anda Braziliensis*, (Raddi.) Brazil.

Bark used for intoxicating fish; seeds a safe and useful purgative, in doses of two seeds; they have the taste of hazel-nuts; the Brazilians use them instead of castor-oil; the bark, roasted, passes as a certain remedy for diarrhœa brought on by cold; according to Martius, it is called *Anda-acu*, *Indayaçu*, *Purga de gentio*, *Cocca*, or *Purgados Paulistas*, *Frutta d'Arara*, in Brazil. Two or three seeds prepared as an emulsion act as a very powerful and safe purgative; they seldom excite vomiting; it has been found extremely efficacious in weakness of the lymphatic system, and particularly in general dropsy. (L.)

BRIEDELIA. (Endl. Gen. Pl. 1119.)

BRIEDELIA SPINOSA. (Willd.) *Cluytia spinosa.* (Roxb.) East Indies.

Bark a powerful astringent; leaves eaten by cattle; said to destroy worms in the bowels. (L. ex Roxb.)

BUXUS. (De Cand. Bot. Gall. 411. Endl. Gen. Pl. 1123.)

*BUXUS SEMPERVIRENS. (Linn.) (E. B. 1431.) *Buxus, Common box-tree.*

Fl. straw-coloured. April. Large shrub. Dry chalky hills.

Wood sudorific. (G.) Leaves bitter and nauseous, sudorific and purgative; chips of the wood have the same properties, and have been

prescribed in syphilitic diseases and chronic rheumatism; a fœtid empyreumatic oil, *Oleum buxi*, was formerly sold in the shops, but for all the purposes of box-oil, preparations of guaiacum are now employed in preference; the oil has been occasionally employed with success in the toothache; camels are poisoned by browsing on the leaves, in some parts of Persia. (L.) The timber of the box-tree is of considerable value; it is sold by weight, and being very hard and smooth, and not apt to warp, is very well adapted to a variety of nicer works; it is extensively employed by the turner, wood-engraver, carver, comb and mathematical instrument maker; and the roots by the cabinet-maker and inlayer; the English wood is esteemed inferior to that which comes from the Levant, and the American box is said to be preferable to ours for most purposes, but the English is superior for the purposes of the engraver. (Lou.)

CATURUS. (L.) (Endl. Gen. Pl. (*Acalypha*) 1111.)

CATURUS SPICIFLORUS. (Linn.) *Acalypha hispida.* (Burm.) East Indies.

Flowers said to be a specific in diarrhœa and similar disorders; boiled in water, or administered in the form of a conserve. (L.)

CICCA. (Endl. Gen. Pl. 1120.)

CICCA DISTICHA. (Willd.) *Averrhoa acida.* (Linn.) *Phyllanthus longifolius.* (Jacq.) *Cheramella.* East Indies.

Leaves sudorific; seeds cathartic; fruit subacid, cooling, and wholesome. (L.)

CICCA RACEMOSA.

Berry acid, eatable.

CLUYTIA. (Endl. Gen. Pl. 1119.)

CLUYTIA COLLINA. (Roxb.) India.

Rind of the capsule reputed to be exceedingly poisonous. (L.)

COMMIA. (Endl. Gen. Pl. 1109.)

COMMIA COCHINCHINENSIS. (Lour.) Cochin China.

Yields a white tenacious juice, or gum, of an emetic, purgative, deobstruent nature; if prudently administered, it is useful in obstinate dropsy and obstructions. (L. ex Lou.)

CROTON. (De Cand. Bot. Gal. 411. Endl. Gen. Pl. 1117.)

CROTON AROMATICUM. (Willd.) Ceylon.

CROTON BALSAMIFERUM. (Linn.) West Indies.

These, and some other species, are used to aromatise distilled liqueurs in the West Indies. (G.) From *C. balsamifera* is distilled a spirituous liqueur called *Eau de mantes*, used in irregular menstruation. (L.)

CROTON CAMPESTRIS. (Aug. de St. H.) South America.

Has a purgative root, and is employed in syphilitic disorders. (L.)

CROTON CASCARILLA. (Linn.) *C. lineare.* (Jacq.) West India Islands.

The bark called *Cascarilla*, a most valuable bitter, aromatic, tonic stimulant, abounding in volatile oil, is by some believed to be produced by this tree; Lindley, however, adduces evidence in opposition

to the opinion of Pereira, to prove that this article is produced by *C. eleuteria*, and not by this, or by *C. pseudo-china*, as supposed by the College of Physicians; Guibourt, however, suggests that several different species may produce it, and this appears to be confirmed by the bills of entry of the Custom-house, which mention imports from places where neither of these species are supposed to exist. *Vide* Med. Bot., p. 880.

CROTON DRACO. (Schelcht.) Mexico.

According to Schiede, this abounds in a sanguine juice, which hardens into the finest kind of *Dragon's blood*, (*Sangre del drago* of the Mexicans,) used in Mexico as a vulnerary and astringent. (L.)

CROTON ELEUTERIA. (Swartz.) *Cascarilla.* West Indies.

Bark, *Eleuteria bark*, *Narcaphte*, *Thymiama*, *Cortex thuris*, *Cascarillæ cortex*, imported from Eleutheria, in the Bahama Islands. This species is considered by Lindley as the true origin of the *Cascarilla bark*, as has also been affirmed by Drs. Wright and Woodville. (L.)

Cascarilla bark consists of pieces of about six or eight inches long, scarcely one-tenth of an inch thick, quilled and covered with a whitish epidermis; it has a pleasant spicy odour, and a bitter, warm, aromatic taste; it is very inflammable, and is easily distinguished from all other barks by emitting, when burned and extinguished, a fragrant smell resembling that of musk; it is a valuable carminative and tonic, and an excellent adjunct to the *Cinchona bark* in fevers.

CROTON HIBISCIFOLIUS. (H. B. et Kunth.) New Granada.

Has similar properties to those of *C. draco*, and like that is called *Sangre del drago*, or *Dragon's blood.* (L.)

CROTON HUMILE. (Willd.) Jamaica.

Used in baths for nervous weaknesses. (G.)

CROTON LACCIFERUM. (Linn.) *Aleurites laccifera.* (Willd.) *C. aromaticum.* (Spreng.) Ceylon.

Yields *Ceylon lac.* (G.) Bark of the root aromatic and purgative; the branches yield very fine lac in grains, in small quantities. (L.)

CROTON LINEARE. (Jacq.) West Indies.

A specific in colic. (G.)

CROTON MOLUCCANUM. (Willd.) Ceylon.

Seeds, having the corculum taken out, esculent. (G.)

CROTON PAVANA. (Hamilt.) East Indies.

This is supposed to have been the original *Tilly seed* plant. (L.)

CROTON PERDICIPES. (Aug. de St. Hil.) South America.

Employed in Brazil as a cure for syphilis, and as a useful diuretic.

CROTON POLYANDRUM. (Roxb.) *Jatropha montana.* (Willd.) East Indies.

Seeds reckoned by the Hindoos a good purgative; one seed, bruised in water, administered for each evacuation. (L. ex Roxb.)

CROTON PSEUDO-CHINA. (Schlecht.) *C. cascarilla.* (Don.) Mexico.

A very distinct species from *C. eleuteria*, and according to Deppe, beyond all doubt the true *Quina blanca*, or *Copalchi*, of the druggists

of Xalapa, and in his opinion, probably the plant yielding the *Cascarilla* of Europe; Professor Don considered it quite certain that this plant produces the *Cascarilla bark* of the English market, but although it is extremely like true *Cascarilla*, it is certainly not the same, as Dr. Pereira has traced the importation of this bark, and shown that it resembles *Ash cinchona bark* in appearance, and is very different in many respects from the officinal *Cascarilla* of this country. There is also another bark, called *Copalchi* in Mexico, which, according to Virey and Guibourt, is furnished by *Strychnos pseudo quina*. (L.)

CROTON SANGUIFLUUS. (H. B. et Kunth.) New Andalusia.
Has similar properties to those of *C. draco*, and is called by the same name (*Sangre del drago*). (L.)

CROTON SUBEROSUM. (H. B. et Kunth.) Acapulco.
Employed in Peru as an aromatic purgative. (L.)

CROTON TIGLIUM. (Lamb.) *C. jalmagota*. (Hamilt.) India, Ceylon.
Seeds, *Molucca grains*, *Purging nuts*, *Grana tiglia*, gr. ss., with catechu gr. j., very hydragogue, emetic, emmenagogue, corrected by acids, or roasting; yield oil; wood, *Lignum pavanæ*, has the same qualities, but weaker, sudorific in a small dose. (G.) This is one of the plants from which the violently drastic substance called *Croton oil*, or *Oil of Tiglium*, is prepared; the seeds are the part used; Dr. Hamilton has indeed shown that the original *Grana dilla*, or *Oil of tilli*, or *Grana tiglia*, were produced in all probability by a different species, *C. pavana*, but this is the plant of Roxburgh, and it is certain that it is the *C. tiglium* of Ceylon. (C.) Croton oil is one of the most violent cathartics we possess. It is an invaluable remedy in apoplexy and similar disorders, where immediate cathartic action is requisite and the swallowing of bulky medicines impracticable; applied externally to the skin, it causes an eruption of very painful pustules, like those caused by tartar emetic ointment.

CROZOPHORA. (Endl. Gen. Pl. 1117.)

CROZOPHORA TINCTORIA. (Juss.) *Cascarilla tinctorium*, *Croton tinctorium*. (Linn.) *Heliotropium*, *Turnsol*. South of Europe.
Juice blue, easily changed to red by acids, and green by alkalies; used to dye rags and paper. (G.) An acrid plant, with emetic, drastic, corrosive properties; its seeds, ground into powder and mixed with oil, are employed as a cathartic medicine; it is cultivated for the deep purple dye, called *Turnsol*, which is obtained from it. (L.) Employed to dye silk and wool of an elegant blue colour, and the juice is used to colour wines and jellies; the substance for this purpose is called *Turnsol*, and is made of the juice which is lodged between the calyx and the seeds; this, if rubbed on cloths, appears at first of a lively green, but soon changes to a bluish purple; if these cloths are put into water, and afterwards wrung, they will dye the water of a claret colour; the rags thus dyed are brought to England, and sold in the druggists' shops by the name of *Turnsol*. (Lou.)

ELÆOCOCCA. (Endl.) Gen. Pl. 1114.)

ELÆOCOCCA MONTANA. *Vernicia montana.* Tropical Asia.
Kernels yield oil.

EMBLICA.

EMBLICA OFFICINALIS. (Gaertn.) *Phyllanthus emblica.* (Linn.) *Myrobalanus emblica.* (Bauh.) *Nilicamaram.* India.

Fruit, *Emblic Myrobalans*, purgative, acidulous, rather austere; when pickled, excites the appetite; root astringent, used in dying. (G.) Fruit extremely acid and astringent, when dry a mild purgative; bark used in India in diarrhœa. (L.) Also for tanning leather. (O'Sh.) The dried fruit, *Emblic Myrobalans*, is about the size of a filbert, nearly spherical, or hexagonal, and separating into six lobes. It contains an obtusely triangular nut within, which has three cells, each containing two red shining seeds.

EUPHORBIA. (De Cand. Bot. Gal. 411. Endl. Gen. Pl. 1108.)

*EUPHORBIA AMYGDALOIDES. (Linn.) (E. B. 2255.) *Tithymalus sylvaticus, T. sylvaticus lunato flore, Evergreen wood spurge, Wood spurge.*

Fl. yellow. March, April. Perennial. Woods and thickets.
Emetic.

EUPHORBIA ANTIQUORUM. (Linn.) *Triangular spurge.* East Indies.

Yields *Gum euphorbium;* cathartic. (G.) Supposed by some to yield the drug *Euphorbium*, a resinous substance, possessing acrid irritant, poisonous properties; in all probability, however, it is obtained from *E. officinarum;* Dr. Christison assigns the substance to the latter, Guibourt to this species, *Officinarum* and *Canariensis;* according to Hamilton and Royle, no euphorbium is obtained from this, at least in India. (L.) One of the species furnishing the *Euphorbium* of the Materia Medica. (Lou.) No euphorbium resin is obtained from this species in India. (O'Sh.)

EUPHORBIA APIOS. (Willd.) *Apios, Knobbed-rooted spurge.* Candia.
Caustic.

EUPHORBIA CANARIENSIS. (Linn.) Canary Islands.

Yields *Gum euphorbium.* (G.) Properties the same as those of *E. officinarum*, but weaker; Martius regards this as the source of *Euphorbium*, but Dr. Pereira says that he is certainly in error, as all our *Euphorbium* comes from Mogador. (L.) One of the plants furnishing the *Euphorbium* of the Materia Medica. (Lou.)

EUPHORBIA CANESCENS.
Antisyphilitic, useful in venomous bites.

EUPHORBIA CHAMÆSYCE. (Willd.) *Chamæsyce, Thyme spurge.* South of Europe.

*EUPHORBIA CHARACIAS. (Linn.) (E. B. 442.) *Tithymalus characias, Red shrubby spurge, Wood spurge.*

Fl. yellowish. March, April.. Large shrubs. Needwood Forest, Staffordshire.
Both violently cathartic.

EUPHORBIA COROLLATA. (Linn.) *Large flowered spurge.* North America.

Root emetic; mixed with true *Ipecacuanha*, and used for it. (G.) A good emetic, in the opinion of Dr. Zollickoffer of Baltimore, not inferior to *ipecacuanha;* it is also expectorant and cathartic; the bruised root, when recent, excites inflammation and vesication. (L.)

*EUPHORBIA CYPARISSIAS. (Linn.) (E. B. 840.) *Cypress spurge.*

Fl. yellowish. June, July. Perennial. Groves and thickets.

Juice may be used for *Scammony*, is also emetic. (G.) A virulent poison; a woman is said to have died in half an hour after taking a dose of the root, and in other cases the skin of the face has peeled off in consequence of its use; nevertheless the powder of the root, in doses of 6—20 grains, or even from a scruple, to a drachm, has been given without any bad consequences. (L.)

EUPHORBIA DENDROIDES. (Willd.) *Tithymalus dendroides, Tree spurge.* Italy.

Violently cathartic.

EUPHORBIA EDULIS. Cochin China.

A kitchen herb. (G.) Said to be used as a potherb in Cochin China. (Lou.)

*EUPHORBIA ESULA. (Linn.) (E. B. 1399.) *Leafy-branched spurge.*

Fl. yellowish. July. Perennial. Sussex, and near Edinburgh.

A dangerous poison: a woman is stated by Scopole to have died half an hour after swallowing thirty grains of the root. (L.)

EUPHORBIA FALCATA. (Linn.) *E. acuminata* and *mucronata.* (Lamb.) *E. arvensis.* (Schleich.) Middle and south of Europe.

The herb, dried and salted, was preserved by the ancient Greeks as a powerful purge. (L.)

EUPHORBIA GERARDIANA. (Jacq.) *E. cajogala.* (Ehr.) *E. glaucescens.* (Willd.) *E. linariæfolia.* (Lamb.) Middle of Germany and Hungary.

Root emetic, mixed with true *Ipecacuanha*, and used for it. (G.) Bark of the root cathartic and emetic; it is said by Loiseleur Deslongchamps to be the best of the European Euphorbias, and to vomit easily in doses of 18—20 grains. (L.)

*EUPHORBIA HELIOSCOPIA. (Linn.) (E. B. 883.) *Sun spurge, Wart wort.*

Fl. yellowish. July, August. Annual. Waste and cultivated ground.

Juice applied to warts. (G.) The juice of every kind of spurge is so acrid, that it corrodes and ulcerates the body wherever it is applied; hence it is dropped on warts and corns to remove them, and in the hollow of a decayed tooth to remove the pain, by destroying the nerve, or it is rubbed behind the ears to give relief in the toothache, by blistering. (Lou.)

EUPHORBIA HEPTAGONA. (Linn.) Cape of Good Hope.

Juice used to poison weapons. (G.) Virey says, the Æthiopians tip their arrows with the milk, which is mortal poison. (L.)

EUPHORBIA HIRTA. *Creeping hairy spurge, Caiaca.*
Dried plant, ʒj., purgative, used in dry bellyache. (G.)

EUPHORBIA IPECACUANHA. (Linn.) *Ipecacuanha spurge.* North America.
Root emetic, mixed with true *Ipecacuanha*, and used for it. (G.)
Root acts powerfully as an emetic; in doses of from ten to twenty grains, it is both an emetic and cathartic; it is more active than *Ipecacuanha* in proportion to the number of grains administered; it wants, however, the peculiar mildness of that drug. (L.)

*EUPHORBIA LATHYRIS. (Linn.) (E. B. 2255.) *Catapuntia minor, Lathyris, Caper spurge, Garden spurge.*
Fl. yellowish. June, July. Biennial. Thickets and woods.
Seeds, No. 12 or 14, purge and vomit violently, useful in dropsy; as they yield a fine oil, have been proposed for cultivation for that purpose; the oil purgative in doses of five or six drops; leaves inebriate fish; milk corrodes warts; decoction depilatory. (G.) This plant, the *Catapuntia minor* of old Pharmacopœias, has drastic seeds; country labourers are said to take one as a purge, and women several to procure abortion; bark of the root and stems, reduced to powder, are cathartic and emetic; it was one of the plants directed by Charlemagne, in his Capitularies, to be grown in every garden; no doubt as the most ready purge then to be procured. (L.)

EUPHORBIA LIGULARIA. (Roxb.) East Indies.
Root, mixed with black pepper, used in India as a cure for the bites of snakes. (O'Sh.)

EUPHORBIA LINEARIS. (Retz.) Brazil.
Called *Erva do andourinha;* milky juice employed for syphilitic ulcers. Martius says it is singular that there is a notion throughout Brazil, that this juice, dropped into a fresh wound in the apple of the eye, immediately effects a cure; it is said this experiment has often been tried with success upon fowls. (L.)

EUPHORBIA MYRSINITIS. (Willd.) *Tithymalus myrsinites, Myrtle spurge.* South of Europe.
Violently cathartic.

EUPHORBIA NEREIFOLIA. (Linn.) India.
Juice of the leaves prescribed by the native Indian practitioners internally as a purge and deobstruent, and externally mixed with margosa oil in such cases of contracted limbs as are induced by ill-treated rheumatic affections; the leaves are no doubt diuretic. (L. ex Ainslie.)

EUPHORBIA OFFICINARUM. (Linn.) Arabia and Africa.
Yields *gum euphorbium*, cathartic. (G.) Milk purgative; seven or eight drops, mixed with flower, and made into pills, or taken in cow's milk as a dose, according to Forskahl. Dr. Pereira is of opinion, that the *Dergrause* of Mr. Jackson, from which, according to the latter author, *Mogadore euphorbium* is obtained, is a species nearly related to this. (L.) *E. officinarum*, and also *Antiquorum* and *Canariensis*, furnish the *Euphorbium* of the Materia Medica. In the lower regions of Mount Atlas, the inhabitants collect the concreted resin, which they

call *Furbiune*, in September; it is obtained by making slight incisions in the branches of the plant with a knife, from which a milk-like juice exudes, and forms into tears, of an oblong or roundish form; the quantity yielded is so considerable, that the plants are cut once only in four years, the supply then obtained being sufficient for that space of time for all Europe; the recent juice is so corrosive as to erode the skin wherever it touches; when dried it is inodorous, and when chewed has little taste, but it soon gives a very acrid burning impression to the tongue, palate, and throat, which is very permanent, and almost insupportable; it possesses powerful cathartic, emetic, errhine, and rubefacient properties; it has been given as a hydragogue in dropsies, but owing to the violence of its effects, its internal use is now exploded; neither as an errhine can it be used alone, for it occasions so much inflammation as to produce hæmorrhage from the nostrils, and swells the integuments of the head; when properly diluted, however, with starch, or any other inert powder, and cautiously used, it is an effectual and excellent errhine in lethargy, deafness, palsy, amaurosis, and similar cases. (Thomson's London Dispensatory.)

EUPHORBIA OPHTHALMICA.
Used in blindness.

EUPHORBIA PALUSTRIS. (Willd.) *Esula major, Great spurge.* Sweden.
Cathartic.

*EUPHORBIA PARALIAS. (Linn.) (E. B. 195.) *Tithymalus paralias, Sea spurge.*
Fl. yellowish. August, September. Perennial. Sandy sea-coasts, south of England.
Used as a a purgative, and for the other uses of spurge. (G.)

*EUPHORBIA PEPLIS. (Linn.) (E. B. 2002.) *Reveillematin, Purple sea spurge.* πεπλις (Dioscorides.)
Fl. yellowish. July, September. Annual. Sea-coasts of Devon and Cornwall.
Purgative, milk acrid; the eyelids, being touched with it, itch so as to hinder sleep. (G.) Properties the same as in *E. falcata.* (L.)

*EUPHORBIA PEPLUS. (Linn.) (E. B. 959.) *Peplus, Petty spurge.*
Fl. yellow. July, August. Annual. Cultivated and waste ground.
Violently cathartic. (G.) Properties like *E. Falcata.* (L.)

EUPHORBIA PILULIFERA. (Willd.) East Indies.
Antisyphilitic, used in venomous bites. (G.)

EUPHORBIA PISCATORIA. (Willd.) Canary Islands.

*EUPHORBIA PLATYPHYLLA. (Linn.) (E. B. 387.) *Broad-leaved warted spurge.*
Fl. yellowish. July, August. Annual. Cornfields.
Used to inebriate fish. (G.)

EUPHORBIA PITHYUSA. (Willd.) *Esula minor, Lesser spurge.* South of Europe.
Milk purgative, corrected by acids. (G.)

EUPHORBIA SEGETALIS. (Willd.) *Tithymalus, Amygdaloides angustifolius, Narrow-leaved wood spurge.* South of Europe.

Employed as a purgative, and for the other uses of spurge. (G.)

EUPHORBIA THYMIFOLIA. (Linn.) East Indies.

Juice made into paste with wheat flour, and formed into pills, is a violent purgative in doses of five pills; the fresh plant, bruised, is applied to wounds among the Arabs. (Forsk.) Leaves and seeds given by the Tamool doctors of India, in worm cases, and certain bowel affections of children. (L.)

EUPHORBIA TIRUCALLI. (Linn.) East Indies.

Cathartic, emetic, antisyphilitic; exhalations affect the eyes. (G.) Milk introduced into the eye produces severe inflammation and even blindness; according to Sonerat, the milk, mixed with flour, is taken in India in doses of a drachm a day, as a remedy for syphilis, and successfully, in cases that are not inveterate; the same milk, thickened by boiling has been used as a cathartic and emetic, but its action is so violent as to render its use very dangerous. (L.)

EUPHORBIA TRIBULOIDES. (Lamb.) Canary Islands.

Said to be a sudorific. (L.)

EUPHORBIA VERRUCOSA. (Willd.) *Rough-fruited spurge, Warted spurge.* France.

Violently cathartic.

EXCŒCARIA. (Endl. Gen. Pl. 1108.)

EXCŒCARIA AGALLOCHA. (Linn.) *Arbor excœcans.* (Rumph.) East Indies.

Trunk abounding in a most dangerous, virulent, acrid milk; wood-cutters, upon whom this juice has flown after a stroke of their axe, reported to Roxburgh, that it produced inflammation and ulceration. Rumph states, that the Dutch sailors who were sent ashore in Amboyna to cut timber, sometimes became furiously mad from the pain produced by the juice that fell on their eyes, and that some of them altogether lost their sight. *Agallochum*, or *Aloes-wood*, is not produced by this tree, but by *Aquilaria agallochum.* (L.)

FICARIUM.

FICARIUM COCHINCHINENSE.

Fruit edible. (G.)

HEVEA. (Endl. Gen. Pl. (*Siphonia*) 1113.)

HEVEA GUIANENSIS. (Aubl.) *Jatropha elastica*, (Pers.) *Siphonia cahuchu*, (Willd.) *Elastic gum tree.* Woods of Guayana.

Yields by incision, *elastic gum.* (G.) This plant produces the Demerara and Surinam *Caoutchouc*, which is imported in bottles and other forms. (L.)

HIPPOMANE. (Endl. Gen. Pl. 1110.)

HIPPOMANE BIGLANDULOSA.

Yields bird-lime.

HIPPOMANE MANCINELLA. (Linn.) *Manchineel.* West Indies.

Fruit beautiful, but so caustic as to corrode the mouth and occasion vomiting; juice of the tree used to poison weapons. (G.) The whole tree abounds in a white, caustic, venomous juice; a drop of it, on the back of the hand, produces instantaneously, like a fire, a blister; all the other parts are acrid in a similar manner; it is uncertain whether sleeping in its shade is so dangerous as popular rumour represents. Jacquin doubts if the stories of the land crabs fed on the fruit, becoming poisonous, can be true. (L.) It is a common belief that to sleep beneath the branches is death, but Jacquin and his companions reposed under it for three hours at a time without inconvenience; the wood is a most beautiful material for furniture, being finely variegated with brown and white, and susceptible of a high polish; the workmen who fell the trees first kindle a fire around them, by which means the juice becomes so much inspissated as not to follow the blows of their axes. (Lou.)

HURA. (Endl. Gen. Pl. 1110.)

HURA CREPITANS. (Linn.) *Sand-box.* Tropical America.

Milk so venomous as to produce blindness a few days after touching the eye; seeds a violent, drastic, dangerous purgative. Aublet states that negro slaves, to whom one or two seeds had been administered, in the form of an emulsion, were almost killed by them; Martius reckons the plant an emetic. (L.)

HYÆNANCHE. (Endl. Gen. Pl. 1124.)

HYÆNANCHE GLOBOSA. (Hort. Kew.) *Jatropha globosa*, *Toxicodendron capense*, *Hyæna poison.* Cape of Good Hope.

Fruit in powder used to poison hyænas. (G.)

JANIPHA. (Endl. Gen. Pl. (*Manihot*) 1115.)

JANIPHA MANIHOT. (H. B. et Kunth.) *Jatropha manihot.* (Linn.) *Manihot utilissima.* (Pohl.) *Bitter cassava.* Brazil.

Root full of an acrid, poisonous, milky juice, separable by expression, or corrected by roasting, thus yielding a nutritive farina; also by boiling the juice, which is used as a sauce, and made into soy. (G.) Expressed juice dangerously poisonous; fecula of the root harmless when separated from the juice, and exposed to heat, becoming *Cassava*, a principal article of diet in South America: the nutritious substance called *Tapioca* is the *Cassava* differently prepared and granulated; these preparations are obtained by crushing the roots after the bark has been removed, and straining off the water, when the mass is gradually dried in pans over the fire. (L.) *Tapioca* and *Moussache* are the fecula of the root of this plant. The juice of this root deposits a white fecula, which after being well washed and dried constitutes what is called *Moussache.* This is formed of rounded grains having a central dark point, and of remarkably equal size. When the moussache is dried on hot plates, the grains partly burst and the fecula agglomerates in irregular, semi-opaque, gum-like masses, and is then called *Tapioca.* This is both highly nutritious and easy of digestion, forming an excellent article of food for the sick and convalescent. *Cassava bread* is made of the tapioca root from which the acrid juice and fecula have been removed by washing; the juice of the root is a very formi-

dable poison. (O'Sh.) The rasped root mixed with water, boiled, and then fermented, yields a spirituous liquor called *Cassiri*. *Cassava meal* is obtained by subjecting the grated root to pressure to express the juice, and then drying and pounding the residual cakes. Of this meal *Cassava bread* is made. The expressed juice by repose deposits the farina called *Cassava starch*, of which *Tapioca* is made. A sauce called *Casareep*, or *Cassireepe*, is made from the juice. (Pereira.)

JATROPHA. (Endl. Gen. Pl. 1114.)

JATROPHA CURCAS. (Linn.) *Curcas purgans.* (Adanson.) *Barbadoes nut-tree*, *Physic nut.* South America, East Indies, Africa.

Seeds, *Semina Curcadis*, *Common physic nut*, very violently purgative and emetic, No. 2 or 3, carefully peeled; yield an oil; shrub yields on incision a lactescent and caustic juice, which dyes linen black; leaves rubefacient. (G.) The leaves rubefacient and discutient; warmed and rubbed with castor oil, are applied by the natives of India to inflammations when suppuration is wished for; seeds are violently emetic and drastic; their expressed oil reckoned a good external application in itch and herpes; it is also used, a little diluted, in chronic rheumatism; milky juice reckoned detergent and healing, it dyes linen black; the oil boiled with oxide of iron forms a varnish, used by the Chinese for covering boxes; in large doses the seeds are energetic poisons; according to Martius, this produces in Brazil the *Pinhões de purga*, one of the strongest known drastics; in a fresh state one seed is sufficient for a dose. (L.)

JATROPHA GLANDULIFERA. (Roxb.) East Indies.

The pale or whey-coloured, thin juice, which exudes from a fresh wound, is employed by the Hindoos as an escharotic, to remove films from the eyes. (L. ex Roxb.)

JATROPHA GLAUCA. (Vahl.) *Croton lobatum.* (Forst.) Arabia Felix.

Seeds pressed for their oil. (G.) Seeds yield a stimulating oil, recommended by the Hindoos as an external application in cases of chronic rheumatism and paralytic affections. (L. ex Ainslie.)

JATROPHA GOSSIPIFOLIA. (Willd.) *Wild cassada. Bastard French physic nut.* West Indies.

Young leaves, No. 6, boiled as greens, a powerful purge; No. 15—20, in decoction, with some castor oil, used as a clyster in dry bellyache; the powder of the gland contained in the stem is an errhine. (G.) Seeds much relished by, and very nourishing to poultry. (Lou.)

JATROPHA MULTIFIDA. (Linn.) *Curcas multifidus.* (Endl.) *Adenorhossium multifidum.* (Pohl.) *French physic nut.* Tropical America.

Seed *Avellana purgatrix*, No. 1, a violent purge. The seeds are one of the best of all emetics and purgatives, acting briskly, but without inconvenience; their effects are readily stayed by the administration of a glass of good white wine. (Lou.)

MANIHOT. (Endl. Gen. Pl. 1114.)

MANIHOT AIPI. (Pohl.) *Sweet Cassava*, (Bancroft.) South America.

Usually considered as a variety of the *Manihot utilissima*, but according to Pohl a distinct species. The root contains a milky, non-poisonous juice. It is cultivated in the Brazils and Spanish America.

MERCURIALIS. (De Cand. Bot. Gall. 417. Endl. Gen. Pl. 1111.)

*MERCURIALIS ANNUA. (Linn.) (E. B. 559.) *M. mas et fœmina*, *Annual mercury*, *French mercury*.

Fl. green. August. Annual. Waste places and cultivated grounds.

Herb detersive, purgative, resolvent, and emmenagogue. (G.)

*MERCURIALIS PERENNIS. (Linn.) (E. B. 1872.) *Cynocrambe*, *Perennial* or *Dog's mercury*.

Fl. greenish. April, May. Perennial. Hedges and thickets.

Herb used instead of *M. annua*, but has produced fatal accidents, (G.) Very poisonous, though, as appears from the accounts of ancient writers, it may be eaten boiled as a potherb, if mixed with mucilaginous plants and oily substances; instances are, however, recorded, of the fatal consequences of its use occasionally in this country. (Smith.) According to Sloane, it has sometimes produced violent vomiting, incessant diarrhœa, a burning heat in the head, a deep and long stupor, convulsions, and even death. (L.) *M. annua* possesses similar qualities, though supposed to be rather less virulent. (Smith.)

MERCURIALIS TOMENTOSA. (Willd.) *Phyllon*, *Children's mercury*. Spain.

Herb used by the Moors in female diseases; decoction recommended in hydrophobia. (G.)

OMPHALEA.

OMPHALEA TRIANDRA. (Linn.) Tropical America.

Nuts exceedingly delicious and wholesome. (L.)

PEDILANTHUS. (Endl. Gen. Pl. 1108.)

PEDILANTHUS TITHYMALOIDES. *Euphorbia tithymaloides*, *E. myrtifolia*, *Jew bush*. West Indies.

The practitioners of Curaçao give a decoction of the whole plant, especially of the stem, as the ordinary beverage, and in arbitrary doses, to patients with venereal complaints. The American women also employ it in suppression of the menses; the plant is moreover known and used as *Ipecacuanha*. (L.)

PHYLLANTHUS. (Endl. Gen. Pl. 1120.)

PHYLLANTHUS NIRURI. (Linn.) *Urinaria indica*. (Burm.) East Indies.

Febrifuge, diuretic, astringent. (G.) Root bitter and astringent; when fresh, employed successfully in jaundice; half an ounce, rubbed in milk, and given night and morning, completed a cure, according to Dr. John, in a few days, without any sensible operation of the medicine. (Roxb.) Root, leaves, and young shoots deobstruent, diuretic, and healing; leaves very bitter, and a good stomachic. (Ainslie.) A decoction of the bruised herbage and seed a specific against diabetes, according to Martius, who says it is called *Erva Pombinha* in Brazil. (L.)

PHYLLANTHUS SIMPLEX. (Retz.) East Indies.

Fresh leaves, flowers, and fruit, mixed with equal parts of *Cumin*

seeds and sugar, and made into an electuary, are administered by the natives of India in doses of a tea-spoonful a day, in cases of gonorrhœa; fresh leaves, bruised and mixed with buttermilk, make a wash to cure the itch in children. (Roxb.)

PHYLLANTHUS URINARIA. (Linn.) *Tsjeru Kirganeli.* India.
A powerful diuretic. (L.) Febrifuge, astringent. (G.)

PHYLLANTHUS VIROSUS. (Willd.) India.
Bark astringent, deleterious to fish. (G.) Bark a strong astringent, intoxicating fish when thrown into water. (L.)

RICINUS. (De Cand. Bot. Gall. 412. Endl. Gen. Pl. 1115.)

RICINUS COMMUNIS. (Linn.) *R. C. minor, Oil bush, Palma christi.* India.
Seeds, *Mexico seeds, Castor seeds, Ricini semina*, purgative; yield oil by boiling or expression; root in decoction diuretic; leaves with lard used externally, as an emollient poultice. (G.) The seeds of this plant yield by expression the well-known valuable cathartic substance called *Castor oil.*

RICINUS VIRIDIS. (Willd.) *R. communis major*, a variety of the above.
Seeds, *Lamp-oil seeds*, yield oil.
Castor oil is used to evacuate the contents of the bowels in all cases where we are particularly desirous of avoiding the production of abdominal irritation, especially of the bowels and the urino-genital organs; it is employed in inflammatory affections of the alimentary canal; in obstructions and spasmodic affections of the bowels, after surgical operations about the pelvis or abdomen, as well as after parturition; in inflammatory or spasmodic diseases of the urino-genital organs; in affections of the rectum; as a purgative for children, and in habitual costiveness; it has also been employed as an anthelmintic for tape-worms, but it does not appear to possess any peculiar or specific vermifuge properties. The dose for children is one or two tea-spoonfuls; for adults, from one to two or three table-spoonfuls. (Pereira.)

ROTTLERA. (Endl. Gen. Pl. 1116.)

ROTTLERA TINCTORIA. (Roxb.) *Poonag. Corunga Munji maram*, or *Monkey's face tree.* East Indies.
The outside of the capsules yield a yellow dye, known under the names of *Wurrus, Waras, Asberg, Capili-podi*, and *Wassunta gunda.* (G.) Capsules the size of a small cherry, clothed with abundance of deep red granular powder, easily rubbed off: this powder is a valuable article of commerce, being much employed by the Moors for dyeing silk of a deep, bright, very beautiful and durable full orange-colour; it is used in the following manner: to four parts of *Wassunta gunda* are added one of alum and two of salt of soda (native barilla); these are rubbed well together, with a portion of expressed oil of sessamum, so small as hardly to be perceived; when well mixed, the whole is put into boiling water, in quantities proportioned to the silk which is to be dyed, and kept boiling smartly more or less time according to the shade required; the silk is turned frequently to render the shade uniform. (Lou.) The tree is called in the Tamul language, *Corunga*

munji maram, which signifies *Monkey's face tree*, these animals being said to paint their faces red by rubbing them with the fruit. (Dr. Buchanan.)

SAPIUM. (Endl. Gen. Pl. (*Stillingia*) 1110.)

SAPIUM AUCUPARIUM. (Willd.) *Hippomane biglandulosa.* (Linn.) Carthagena.

Yields *birdlime.* (G.) The inspissated juice furnishes a kind of birdlime, which is venomous; the vapours from this juice are highly dangerous, producing erysipelatous inflammation. (L.)

SAPIUM INDICUM. (Willd.) Delta of the Ganges.

Juice highly poisonous; seeds used for intoxicating fish. (L.)

STILLINGIA. (Endl. Gen. Pl. 1110.)

STILLINGIA SEBIFERA. (Willd.) *Cascarilla sebiferum, Sapium sebiferum, Tallow-tree.* China.

Seeds yield tallow. (G.) An oil is expressed from the kernel, which hardens by cold to the consistence of common tallow, and by boiling becomes as hard as bees'-wax. (Lou.) Seeds covered with a waxy substance, used in China for making candles. (O'Sh.)

STILLINGIA SYLVATICA. (Willd.) Carolina.

Considered a specific in cases of syphilis. (Lou.)

TRAGIA. (Endl. Gen. Pl. 1111.)

TRAGIA INVOLUCRATA. (Willd.) India.

Roots, according to the Hindoo doctors, useful in altering and correcting the habit in cachexia, and old venereal complaints attended with anomalous symptoms. (L. ex Ainslie.) Hairs sting violently. (O'Sh.)

ORDER 132.—URTICEÆ. (De Cand. Bot. Gall. 417. Endl. Gen. Pl. 282.)

Flowers small, greenish, monœcious, or diœcious, solitary, or surrounded by a monosepalous involucrum; *perigone* monosepalous, 3—5 lobed, persistent. *Male flower. Stamens* definite, inserted into the base of the perigone. *Fem. flower. Ovary* simple, free; *styles* 2 or 1, bifurcate; *fruit* an achene or drupe, covered by the persistent perigone, solitary, or inserted into the dilated fleshy receptacle; *seed* pendulous, albuminous, or exalbuminous; *embryo* straight, curved, or spiral; *radicle* generally superior. *Herbs* or *trees*, usually with hispid and spathulate *leaves*; *flowers* capitate, or racemose.

ANTIARIS. (Endl. Gen. Pl. (*Artocarpeæ*) 280.)

ANTIARIS TOXICARIA. (Lesch.) *Ipo toxicaria.* Java, Baly, and Celebes.

Milky juice, *Upas antiar*, used to poison instruments. (G.) One of the most virulent of known poisons. Some persons are exposed to danger when they only approach the trees; Leschenault de la Tour sent a man up into a tree, he became very ill, his body swelled, and for several days he suffered severely by vertigo, nausea, and vomiting; others experience no inconvenience from the exhalations of the tree. Blume considers it to act chiefly upon the vascular system, and states, that it acts differently upon different animals; thus it destroys apes, cats, bats, and some kinds of birds, more rapidly than dogs or the more robust mammalia, while fowls, &c., are little affected by it, and either

recover, or die after a much longer time than any of the above-mentioned animals, even mammalia; notwithstanding its virulence, the concrete juice has been used medicinally, but even in minute doses it produces violent vomiting and purging, and seems to be too dangerous to be employed except with extreme caution. (L.)

ANTIARIS SACCIDORA. (Dalz.) *Lepurandra saccidora* (Nimmo) *Sack tree.* Western India.

A gigantic tree, with a trunk eighteen feet in circumference at the base. On wounding the fruit a milky viscid fluid exudes in considerable quantity, which hardens into the appearance and consistence of bees' wax, but eventually becomes black and shining. The inner bark of the tree is composed of very strong tenacious fibres well adapted for cordage and mattings. Sacks are made from this tree in Western India, in the following manner:—A branch is cut corresponding with the size of the sack required, this is soaked a little, and then beaten with clubs until the fibre separates from the wood; the bark is now turned inside out, and pulled off, with the exception of a small space at the end; the trunk is sawed off from this piece, which is left to form the bottom of the sack.

ARTOCARPUS. (Endl. Gen. Pl. (*Artocarpeæ*) 281. Lindl. Nat. Syst. 178.)

ARTOCARPUS BENGALHENSIS. *Wontay.*

Fruit preserved in salt, used in cookery instead of tamarinds.

ARTOCARPUS INCISA, (Willd.) *Bread-fruit tree.* South Sea Islands.

Fruit, *Bread fruit*, *Meat fruit*, when unripe contains a farinaceous pulp; before the seeds fill, the fruit is very pulpy and pleasant. (G.) The fruit is about the size and shape of a child's head; it is covered with a thin skin, and has a core about the size of the handle of a small knife; the eatable part lies between the skin and the core; it is as white as snow, and somewhat of the consistence of new bread; it must be roasted before it is eaten, being first divided into three or four parts. Besides this use of the fruit, the economical purposes to which the other parts of the tree are applied are various; the wood is used in building boats and houses; a cloth is made of the inner bark; the male catkins serve for tinder, the leaves for wrapping up food, and for wiping the hands instead of towels; and the juice for making birdlime, and a cement for filling up the cracks of vessels for holding water. (Lou.)

ARTOCARPUS INTEGRIFOLIA. (Willd.) *A. jaca*, *Jack-tree.* India.

Fruit eatable, juice yielded by incision elastic like Indian rubber; bark said to make Chinese rice-paper, used for flower painting; others ascribe this paper to *Nelumbium speciosum.* (G.)

BAGASSA. (Endl. Gen. Pl. (*Artocarpeæ*) 282. Lindl. Nat. Syst. 178.)

BAGASSA.

Tree lactescent; fruit eatable. (G)

BÖHMERIA. (Endl. Gen. Pl. 284.)

BÖHMERIA CAUDATA. Woods of Jamaica and Brazil.

Called *Asapeixe* in Brazil, according to Von Martius, who states,

that a decoction of its leaves in baths is prescribed in hemorrhoidal complaints, and is said to produce extraordinary effects. In the northern parts of Brazil, where this plant does not grow, they use instead of it several kinds of Böhmeria and of Urtica. (L. ex Martius.)

BÖHMERIA NIVEA. (Gaud.) *Urtica nivea.* (Linn.) *Chinese grass plant, Chinese Böhmer nettle.* East Indies and China.

The fibre of this plant has been for a long time used by the Chinese and natives of various parts of the Indian Empire, for the manufacture of textile fabric. By simple maceration of the plants, they obtain from them a strong and very useful fibre. It is comparatively a new material in the hands of manufacturers of this country, but has been known to scientific men for a considerable time; certain practical difficulties, however, have prevented it hitherto from being usefully and profitably employed; there is, however, a prospect, from recent improvements that have been made in the preparation of the fibre, that these difficulties will be ultimately removed. The fibre is known in commerce as *China grass.*

BÖHMERIA PUYA. (Wallich.) *Nepal Böhmer nettle, Pooah* or *Puya.* Bengal.

Yields a fibre which is used for making cloth.

BROSIMUM. (Endl. Gen. Pl. 279.)

BROSIMUM. (Swartz.) Some species of this genus is the celebrated *Cow tree,* or *Palode Vaca.*

CANNABIS. (De Cand. Bot. Gal. 417. Endl. Gen. Pl. (*Cannabineæ*) 286.)

**CANNABIS SATIVA. (Linn.) *C. Indica, Cannabis, Gunga, Hemp.* Fl. greenish. July, August. Annual. Native of India.

Juice made into an agreeable inebriating drink; seeds oily, cooling, antiphrodisiac, pectoral, aperitive, but inebriating, and producing fatuity; leaves used as tobacco; *Churrus,* the resinous extract obtained from the plant when in fruit. (G.) A very powerful stimulating narcotic, much used in some countries as an intoxicating drug; under the names of *Banga, Bang,* or *Gunga,* in India, of *Kinnab,* (the root of the word *cannabis,*) or *Hashish,* in Arabia, *Malach* among the Turks, *Ducha* with the Hottentots: the dried leaves are universally employed either mixed with tobacco for smoking, or in the form of powder which is swallowed in some fluid; the male flowers are employed in the same manner; in Nepal, a narcotic gum resin called *Churrus* is supposed to be obtained from hemp. The best of all cordage is manufactured from the tough woody tissue of the stems; hemp seed is nutritious, and not narcotic; it has the very singular property of changing the plumage of bullfinches and goldfinches, from red and yellow to black, if they are fed on it for too long a time, or in too large a quantity. (Burnett.) For an interesting account of the effects of the administration of hemp resin in various complaints, &c., see O'Sh., Bengal Dispensatory, p. 579, et seq. A variety of this plant yields the substance known as *Tobacco of the Congou D'ambra Dakka.* It is prepared for the purposes of smoking, and possesses powerful stimulating and intoxicating

properties. Nearly all the Hottentot and Kaffir races are acquainted with its qualities, and it is commonly used by the negroes of the Kongo and Angola, by whom it is termed *Tobacco of the Congou*. The plant has numerous native titles, but is only understood by those given by the negroes in their native countries. The people of Ambriz and Musula, pronounced the word *D'yambah*, the various races in Kaffraria know it by its Hottentot name *Dakha* or *Dacha*.

DORSTENIA. (Endl. Gen. Pl. (*Moreæ*) 278.)

DORSTENIA BRAZILIENSIS. (Lamb.) *D. cordifolia*. (Swartz.) *D. tubicina*. (Hook.) *Caapia*. Jamaica, Brazil, Trinidad.

Root diaphoretic, sold as *Contrayerva*. (G.) The tuberous root is used like *Serpentaria* against nervous fevers and general debility, as well as against the bite of serpents, and when quite fresh, is said to operate more powerfully than that, but to lose its virtue more speedily; sometimes also it serves as a gentle emetic; this plant is frequently confounded with other species of Dorstenia, all which, however, are inferior to it in salutary virtue. (L. ex Martius.)

DORSTENIA CONTRAYERVA. (Linn.) *Contrayerva drakena*, *Lisbon contrayerva*. New Spain, West Indies.

Root, *Contrayervæ radix*, imported from the West Indies in pieces about two inches long, packed in bales; when fresh, acrid; when dry, aromatic, stimulant, antiseptic, diaphoretic.

DORSTENIA DRAKENA. (Mill.) High grounds near Vera Cruz.

DORSTENIA HOUSTONI. (Mill.) Campeachy.

Roots diaphoretic, sold as *Contrayerva*. (G.) Under the name of *Contrayerba*, or *Contrayerva*, there is imported from the West Indies an officinal root, which has stimulant, sudorific, and tonic qualities; it is used in malignant eruptive diseases, dysentery, some kinds of diarrhœa, atonic gout, chronic rheumatism, and the fever attending dentition in weak infants. According to the last edition of the London Pharmacopœia, this drug is produced by *Dorstenia contrayerva*; Dr. Houston, however, asserts that it came from *D. Houstoni*, and another species referred by botanists to *D. drakena*. Guibourt says, there are two kinds, one furnished by *D. braziliensis*, and the other by *D. contrayerva*, *D. Houstoni*, and *D. drakena*. Finally Dr. Theodore Martius refers the drug to *D. braziliensis*, *Contrayerva*, *Houstoni*, and an undescribed species which he calls *D. opifera*, a sort which is more farinaceous than the other; the only conclusion from this is, that *Contrayerva* is in all probability produced by several species. (L.)

FICUS. (De Cand. Bot. Gal. 419. Endl. Gen. Pl. (*Moreæ*) 278.)

FICUS BENGALHENSIS. (Willd.) *Jamaica fig tree*. East Indies.

Milky juice used against the poison of manchineel. (G.)

FICUS CARICA. (Linn.) *F. vulgaris*, *Fig tree*. Persia and Asia Minor.

Dried fruit, *Carica*, *Caricæ fructus*, emollient, laxative, pectoral, used as a suppurative poultice; milk of the tree caustic, consumes warts; leaves kept long upon the skin inflame it. (G.) All the parts

abound in an acrid milky juice, which produces a disagreeable burning sensation in the fauces; when quite ripe, this disappears in the fruit, which becomes sweet, high-flavoured, wholesome, and delicious; eaten in moderation they are digestible, but in too great quantity they occasion flatulence and diarrhœa; they are pectoral and demulcent, and are occasionally eaten to remove habitual costiveness; roasted and split, they are sometimes used as poultices for gumboils, and other circumscribed maturating tumours; they are employed in making the confection of senna, and in other preparations. (L.)

FICUS DÆMONA. (Vahl.) Tanjore.
Juice extremely poisonous. (L.)

FICUS ELASTICA. (Roxb.) Silhet.
A great quantity of tenacious juice flows from the branches when wounded, and inspissates into an excellent kind of *caoutchouc*, which is now imported: there is no reason to doubt that many other species of this genus yield a juice with quite the same properties; it is believed that the *Java caoutchouc* is produced exclusively by figs. (L.)

FICUS INDICA. (Linn.) *Banyan tree, Indian fig tree.* East Indies.
Milky juice glutinous, and becomes a soft kind of *Indian rubber.* (G.) *Gum lac* is obtained from the fruit in abundance; the white glutinous juice is applied to the teeth and gums to cure the toothache; it is also considered a valuable application to the soles of the feet, when cracked and inflamed; the bark is supposed to be a powerful tonic, and is administered by the Hindoos in diabetes. (L.)

FICUS RACEMOSA. (Linn.) East Indies.
Bark slightly astringent; and has particular virtues in hæmaturia and menorrhagia; juice of the root considered a powerful tonic. (L.)

FICUS RELIGIOSA. (Linn.) East Indies.
Seeds considered by the Indian doctors to be cooling and alterative. (L.) Bark deemed a good tonic. (O'Sh.)

FICUS SEPTICA. (Forst.)
A powerful vermifuge; milky juice very acrid. (G.) Leaves emetic. (L.)

FICUS SYCAMORUS. *Sycamore fig.*
Fruit less agreeable and less digestible than that of *F. carica.* (G.)

FICUS TOXICARIA. (Linn.) India.
Used to impoison weapons. (G.) Juice a virulent poison. (L.)

HUMULUS. (De Cand. Bot. Gal. 419. Endl. Gen. Pl. (*Canabineæ*) 286.)

*HUMULUS LUPULUS. (Linn.) (E. B. 427.) *Lupulus, Common hop.*
Fl. greenish-yellow. July. Perennial. Climbing shrub. Hedges, &c.
Young shoots eaten as a depurative; *Hops, Humuli strobile,* bitter,

inebriating, diuretic, also sedative; used to flavour beer, and the only legal substance for that purpose; yellow powder sifted from the strobiles, *Lupuline*, *Lupulinum*, qualities the same as the strobiles, but much stronger; yields an essential oil. (G.) The ripe catkins are said to be narcotic and extremely bitter; pillows stuffed with them have been used as agreeable sedatives; the infusion and tincture act as pleasant agreeable tonics, but Dr. Pereira doubts the existence of the narcotic effects that have been ascribed to hops; certain yellow grains called *Lupuline*, found sticking to the surface of the fruit, are considered to be the seat of the active principle. (L.) The use of hop in brewing is to prevent the beer from becoming sour; the young shoots, both of the wild and improved hops, are eaten early in the spring as asparagus, and were formerly brought to market for that purpose: the stalk and leaves will dye wool yellow; from the stalks a strong cloth is made in Sweden; a decoction of the roots is said to be as good a sudorific as *Sarsaparilla*, and the smell of the flowers is soporific; during the illness of George III. in 1787, a pillow filled with hops was used instead of opiates. (Lou.)

PARIETARIA. (De Cand. Bot. Gal. 418. Endl. Gen. Pl. 284.)

*PARIETARIA OFFICINALIS. (Linn.) (E. B. 879.) *Helsine*, *Parietaria*, *Pellitory of the wall.*

Fl. purplish green. June, September. Perennial. Old walls.

Herb cooling, opening, diuretic, pectoral, antiasthmatic. (G.)

MACLURA. (Endl. Gen. Pl. 278.)

MACLURA TINCTORIA. North America.

Yields *Fustic*, imported from St. Domingo, Savanilla, and Cuba.

MORUS. (De Cand. Bot. Gal. 419. Endl. Gen. Pl. (*Moreæ*) 283.)

MORUS ALBA. (Linn.) *White mulberry.* China and Persia.

Fruit esculent. (G.) Root said to be an excellent vermifuge. (L.)

MORUS NIGRA. (Linn.) *Black mulberry.* Persia.

Bark of the root cathartic, vermifuge, dose 3 ss. in powder; fruit, *Mora*, *Mori baccæ*, esculent, made into a syrup. (G.) Fruit cooling and laxative; when not too ripe allays thirst, and proves exceedingly grateful in febrile diseases; when eaten too freely as an article of food, it is apt to occasion diarrhœa. (Thompson.) Bark said to be cathartic and anthelmintic. (L.)

MORUS PAPYRIFERA (Linn.) *Broussonetia papyrifera.* (Veut.) *The Cloth tree. The paper mulberry tree.*

South Sea Islands, China, and Japan.

The bark is beaten and prepared, so as to form a sort of cloth which is used for articles of clothing by the natives of the South Sea Islands. In China and Japan paper of different qualities is made from it.

MORUS RUBRA. (Willd.) *Red mulberry.* North America.

Fruit esculent. (G.)

MORUS TINCTORIA. (Willd.) *Broussonetia tinctoria.* (Kunth.) *M. Xanthoxylum*, *Fustic.* West Indies.

Abounds with a sulphurous milk; wood, *Old fustic*, *Bois jaune*,

Bois d'Angleterre, sulphur-coloured, in large blocks ; with alum dyes a very durable yellow colour, with iron liquor drab colour, and with both mordants an olive. (G.)

URTICA. (De Cand. Bot. Gal. 418. Endl. Gen. Pl. 283.)

URTICA CRENULATA. (Roxb.) Bengal.

Reported to be one of the most venomous of the genus. M. Leschenault mentions his having been dangerously affected by their sting, (vide Lindl. Nat. System, 176,) of which, however, Roxburgh says, nothing. (L.)

*URTICA DIOICA. (Linn.) (E. B. 1750.) *Urtica, Common nettle.*

Fl. greenish. July, August. Perennial. Waste places and hedges.

Root astringent, seed pectoral. (G.) Independently of its well-known stinging properties, which indicate the presence of a virulent poisonous principle, a decoction strongly salted will coagulate milk without giving it any unpleasant flavour ; the whole plant is esteemed astringent and diuretic. (L. ex Burnett.) The tops of the tender shoots of this plant are sometimes used as a potherb early in spring ; the stalk is found to have a texture somewhat like that of hemp, and to be capable of being manufactured into cloth, ropes, and paper. As a remedy for the sting of the nettle, its own juice, or that of the dock, may be applied. (Lou.)

URTICA HETEROPHYLLA. (Willd.) Malabar.

Very severe, though not permanent pain, is produced by the sting of this nettle. (L.)

*URTICA PILULIFERA. (Linn.) (E. B. 148.) *A. romana, Roman nettle.*

Fl. greenish. June, July, Annual. Under walls and among rubbish near the sea. Norfolk and Suffolk.

Root astringent, seeds pectoral. (G.)

URTICA TENACISSIMA. (Roxburgh.) *Callooee hemp.*

Among the various fibres examined by Dr. Roxburgh, at the commencement of the present century, with a view to the discovery of some cheap and good substitute for hemp, one of the most promising was the *Callooee hemp*, *Kankura*, or the *Ramy* of the Islands and Malay peninsula ; the *Callooee*, *Rami*, or *Kalmoi* of Sumatra. This he found to be the produce of an urtica, to which he gave the name of *urtica tenacissima.* The China grass appears to consist of the fibre of two or three species of urtica, and amongst others, the *urtica heterophylla.* The two last are very abundant, and can be had in almost unlimited quantities in many parts of the empire. It is from the *urtica tenacissima* that the *Rhea* of Assam is procured. In the form of hemp, and when the fibre is well prepared, it is remarkably strong ; and when thoroughly bleached, although the strength is then somewhat diminished, it acquires a most remarkably beautiful white silky lustre.

*URTICA URENS. (Linn.) (E. B. 1236.) *Small stinging nettle.*

Fl. green. June, October. Annual. Waste places and cultivated ground.

Root astringent, diuretic, depurative ; plant used in palsy and lethargy as an irritant, producing a crop of small blisters on the skin ; the young shoots boiled as a potherb. (G.)

Order 133.—JUGLANDEÆ. (De Cand. Bot. Gal. 420.)

Flowers monœcious; *male flower* amentaceous; *perigone* scaly, 2—6 lobed; *stamens* hypogynous; indefinite in number, filaments very short, free; *anthers* two-celled, innate; *female flower, perigone* double or single, adherent to the ovary, the outer four-divided; the inner, when present, four-petalous; *ovary* one-seeded, ovule erect; *styles* 1—2, very short, with two thick stigmas, or none, and then the stigma is large, discoid, or lobed; *drupe* fleshy, containing a 2—4 partitioned nut; *seed* with cerebriform convolutions, more or less four-lobed, covered by a membranaceous integument; *embryo* large, exalbuminous; *cotyledons* fleshy, two lobed; *radicle* superior. *Tree*, with alternate, imparipinnate *leaves*, stipules none; *female flower* terminal, 1—3, or more, in a loose spike; *male flower* remote, closely spiked.

Juglans. (De Cand. Bot. Gal. 420.)

Juglans alba. (Willd.) *American hiccory.* North America.

Bark, green leaves, and rind of fruit, used in dyeing, with alum, a bright yellow colour.

Juglans cinerea. (Linn.) *J. cathartica.* (Michx.) *Butter nut, Pennsylvania walnut.* United States.

Inner bark, especially of the root, *Juglans P. U. S.*, a very mild, innocent and efficacious laxative, and used against worms; usually employed in America in the form of an extract; bark of stem said to be rubefacient.

**Juglans regia. (Linn.) *Common walnut.*

Fruit globose. Fl. straw-coloured. May, June. Large tree. Native of Persia.

Sap yields sugar; kernels of seeds cooling, but are difficult of digestion; when old, acrid; yield half their weight of oil by expression; peel of fruit used in dyeing brown colours; leaves detersive, diaphoretic, antiarthritic, antisyphilitic; inner bark emetic, and also cathartic, when given in pills; spongy substance within the nut astringent. (G.) In Circassia the tree is pierced in the spring, and a spigot left for some time in the hole; when the spigot is withdrawn, a clear sweet liquor flows out, which is left to coagulate, and on some occasions they refine it; it is considered by them as a most valuable medicine for diseases of the lungs and general debility. (Spencer's Circassia.) The very young fruit, bruised and formed into a conserve, by boiling in coarse sugar, forms an agreeable and effective purgative without griping. (Lou.) *Pickled walnuts.* The young fruit salted and then steeped in vinegar, with spices, used as a condiment. (G) The bark of the root is stated to be rubefacient, the inner bark of the stem emetic. These reputed properties demand investigation. (O'Sh.)

Order 134.—AMENTACEÆ. (De Cand. Bot Gal. 420.) (Endl. Gen. Pl.) (Class Juliflorœ.) *Divided into various orders.*

Flowers diœcious, monœcious, or rarely hermaphrodite; *male flower* capitate, or in a catkin, furnished with a scale, or squamiferous perigone; *stamens* inserted on the scale, very rarely monadelphous; *anthers* bilocular; *female flower* solitary, fasciculated or amentaceous, furnished with a scale or perigone; *ovary* one, (rarely more,)

free; *stigmas* numerous; *pericarps* as many as the ovaries, osseous, or membranaceous; *albumen* none, or thin; *embryo* straight, or curved, flat; *radicle* generally superior. *Trees* or *shrubs*, with alternate *leaves*, which are stipulate when young.

ALNUS. (De Cand. Bot. Gal. 412. Endl. Gen. Pl. (*Betulaceæ*) 272.)

*ALNUS GLUTINOSA. (Gaertn.) (E. B. 1508.) *Alnus, Betula alnus.* (Linn.) *Alder.*

Fl. catkins green. March, April. Tree. Moist ground near rivers.

Bark and leaves very astringent; vulnerary. (G.) A decoction of the bark is employed as a gargle in relaxation of the mucous membrane of the fauces, and in double the dose of cinchona it has been administered with success in cases of ague. (L.) The timber is used for a variety of purposes, and in general for all works intended to be constantly under water, for turnery and furniture; the bark is used by dyers and tanners, the sap being of a yellow colour, and very astringent. (Lou.)

BETULA. (De Cand. Bot. Gal. 422. Endl. Gen. Pl. (*Betulaceæ*) 272.)

*BETULA ALBA. (Linn.) (E. B. 2198.) *Betula, Birch.*

Fl. catkins green. April, May. Large tree. Woods.

Leaves used in itch and dropsy. (G.) Bark applicable to many useful purposes; employed as a febrifuge, and yields by distillation a pyroligneous oil, to which Russia leather, dressed with it, is said to owe its remarkable odour. (L.)

BETULALENTA. *Sweet birch, Black birch, Cherry birch,* and *Mountain mahogany.* North America.

This is one of the finest trees of the American forest, and is no less useful than large, the wood being employed for a number of economic purposes, as cabinet work, &c. By distillation of the bark it yields also a volatile oil. It is found abundantly in the middle and northern states, and in Canada, and attains the height of eighty feet. It is stated that the dry bark does not possess the peculiar odour of the volatile oil, which is developed only by the contact of water; it is therefore probable, that the volatile oil is produced by the decomposition of some principle in the bark, in the presence of water. The oil is colourlesss, and resembles that of Gualtheria in odour and taste.

CASTANEA. (De Cand. Bot. Gal. 428. Endl. Gen. Pl. (*Cupuliferæ*) 275.)

CASTANEA PUMILA. (Willd.) *Chinquassin.* North America.

Bark, *Castanea, P. U. S.*, astringent. (G.) Fruit very sweet and agreeable to eat. (Lou.)

*CASTANEA VULGARIS. (Lamb.) *Fagus castanea, Spanish chestnut.*

Fl. yellowish. May, June. Large tree. Woods. Doubtful native.

Bark astringent; fruit dried upon hurdles over a clear fire, nutritive, pectoral. (G.) Dried fruit not only boiled and roasted, but ground into meal, and puddings, cakes, and bread, are made from it. (Lou.)

CELTIS. (De Cand. Bot. Gal. 421. Endl. Gen. Pl. (*Celtideæ*) 276.)

CELTIS AUSTRALIS. (Willd.) *Nettle tree.* South Europe.

Berries astringent, esculent; kernels yield an oil; wood dyes brown.

(G.) The wood, one of the hardest we are acquainted with, very tough and flexible, used in France for hay-forks and other agricultural purposes. (Lou.)

COMPTONIA. (Lind. Med. Bot. 306.)

COMPTONIA ASPLENIFOLIA. (Ait. Kew.) *Liquid ambar asplenifolium.* (Linn.) United States.

Tonic and astringent; in the United States it is a favourite domestic remedy in the cure of diarrhœa. (L.)

CORYLUS. (De Cand. Bot. Gal. 419. Endl. Gen. Pl. (*Cupuliferæ*) 274.)

*CORYLUS AVELLANA. (Linn.) (E. B. 723.) *Avellana, Hazel Nut tree.*

Fl. March, April. Large shrub. Hedges and copses.

Nuts imported from Barcelona; kernel of the nut oily, pectoral, used in emulsions, yields oil. (G.)

FAGUS. (De Cand. Bot. Gal. 428. Endl. Gen. Pl. (*Cupuliferæ*) 275.)

*FAGUS SYLVATICA. (Linn.) (E. B. 1846.) *Fagus Beech.*

Fl. yellowish-green. April, May. Large tree. Woods.

Seeds, *Beech mast*, useful in gravelly complaints; yield oil by expression. (G.)

LIQUIDAMBAR. (Endl. Gen. Pl.) (*Balsamifluæ*) 289.

LIQUIDAMBAR ALTINGIA. (Blume.) *Altingia excelsa.* (Noronha.) Ra-sa-ma-la. Java.

Bark yields a fragrant balsam which Lindley says is undoubtedly "the fine liquid storax, or *rasamala*, of the Malayan Archipelago." This is not the liquid storax of commerce.

LIQUIDAMBAR ORIENTALE. (Mill.) *L. imberbe.* (Ait.) *Platanus orientalis.* (Pocock.) Cyprus and East of Europe.

Yields by incision an excellent white turpentine. The common Cypriots toast and suck morsels of the wood and bark, esteeming them a specific remedy for fevers. (L.) Lindley has referred the liquid storax of commerce to this tree, but Dr. Pereira was of a different opinion.

LIQUIDAMBAR STYRACIFLUA. (Linn.) *Styrax aceris folio.* (Raj.) *Sweet gum.* Mexico, and southern states of North America.

A balsamic juice flows from the trunk of the tree when wounded, which is called *Liquidamber*, or *Copalm balsam.* This is a transparent liquid, of the consistence of thin honey, of a yellowish colour, agreeable balsamic odour, and bitter acrid taste. An inferior product is obtained by boiling the young branches in water, and skimming off the fluid which rises to the surface.

MYRICA. (De Cand. Bot. Gal. 431. Endl. Gen. Pl. (*Myricaceæ*) 271.)

MYRICA CAROLINENSIS. (Willd.) North America.

Yields green wax. (G.)

MYRICA CERIFERA. (Linn.) *Bayberry, Candleberry myrtle, Waxberry.* United States.

Roots in infusion very astringent; berries yield green wax. (G.) Bark of the root acrid and astringent, in large doses producing vomiting, accompanied by a burning sensation; costiveness generally follows

its use. The fruit is covered with a waxy, aromatic secretion, which may be collected and purified, and is used for many of the purposes for which bees-wax and tallow are employed. It has occasionally been used in pharmacy in various compositions intended for external use, and is mild or stimulating according as it is more or less pure. (Bigelow.) (L.) In Carolina they also make sealing-wax from these berries. (Lou.)

*Myrica Gale. (Linn.) (E. B. 562.) *Gale frutex, Dutch myrtle, Sweet gale, Sweet willow.*

Fl. green. May. Small shrub. Bogs and marshy ground.

Strong smelling, driving away insects; leaves astringent, substituted for tea, vermifuge, used as spice. (G.) The infusion has been used to cure the itch, and also as a vermifuge; the leaves are used as a substitute for hops in brewing. (L.)

Myrica pennsylvanica. (Ph.) North America.

Yields green wax.

Platanus. (De Cand. Bot. Gal. 430. Endl. Gen. Pl. (*Plataneæ*) 289.)

Platanus occidentalis. (Linn.) *Virginian plane tree.* North America.

Root vulnerary, dyes red. (G.)

Platanus orientalis. (Linn.) *Oriental plane tree.* Asia.

Leaves ophthalmic in wine; bark antiscorbutic, infused in vinegar. (Vide *Liquid ambar.*)

Populus. (De Cand. Bot. Gal. 427. Endl. Gen. Pl. (*Salicineæ*) 290.)

*Populus alba. (Linn.) (E. B. 1618.) *Abele, White poplar.*

Fl. April. Large tree. Moist and mountain woods.

Bark useful in strangury. (G.)

Populus balsamifera. (Linn.) *P. Tacamahaca*, (Mill.) *Carolina poplar, Tacamahac poplar.* North America, Siberia.

Yields *Tacamahaca* in the lump; buds very resinous, infused in oil to form a vulnerary balsam. (G.) Buds gathered for medicinal purposes; their resinous excretion, collected in shells, is brought to Europe from Canada, and is said to be diuretic and antiscorbutic. (L.)

Populus candicans. (Hort. Kew.) North America.

Populus laurifolia. (Ledeb.)

Have similar properties to the last. (L.)

Populus dilatata. (Hort. Kew.) *Lombardy poplar.* Italy.

Properties like those of *P. nigra.*

**Populus fastigiata. (Poir.) *Italian poplar, Lombardy poplar.*

Fl. April. Large tree. Native of the East.

Bark dyes mordore colour. (G.)

*Populus nigra. (Linn.) (E. B. 1910.) *Black poplar.*

Fl. April. Large tree. Watery places and river banks.

Buds resinous. (G.) The young leaf buds have a strong aromatic bitter taste, and when fresh crushed, are occasionally used in the pre-

paration of an ointment (*Unguentum populeum*) for tumours, wounds, and burns; they are also employed as the basis of a balsam, and sometimes used for colic, headache, &c. (L.)

POPULUS PYRAMIDALIS. *Lombardy poplar.*

With nitro-muriate of tin dyes a fine yellow. (G.)

*POPULUS TREMULA. (Linn.) (E. B. 1909.) *Aspen, Trembling poplar.*

Fl. April. Large tree. Moist woods.

Bark useful in strangury.

POPULUS TREMULOIDES. (Michx.) *P. trepida.* (Willd.) United States.

Bark tonic and stomachic. (G.) Bark esteemed as a febrifuge in the United States. (L.)

QUERCUS. (De Cand. Bot. Gal. 428. Endl. Gen. Pl. (*Cupuliferæ*) 274.)

QUERCUS ALBA. (Ph.) *White oak.* North America.

Bark emetic.

QUERCUS ÆGYLOPS. (Willd.) *Holm oak.* The Levant.

Cups, *Valonia*, very large, used in dyeing instead of nut galls; imported from Greece. (G.)

QUERCUS BALLOTA. (Willd.) Barbary.

Acorns used as food, yield oil. (G.)

QUERCUS COCCIFERA. (Linn.) *Kermes oak.* South of France.

Is infested by an insect belonging to the genus coccus, and yielding the *Kermes* dye, from which scarlet cloths are often prepared. (L.)

QUERCUS CASTANEA. (Ph.) North America.

QUERCUS CASTILLANA.

QUERCUS ESCULUS. (Willd.) South of Europe.

Acorns eatable. (G.)

QUERCUS FALCATA. (Michx.) United States.

Leaves used externally in gangrene. (G.) Leaves employed in gangrene on account of their astringency. (L.)

QUERCUS ILEX. (Willd.) *Evergreen oak.* South of Europe.

Astringent, more so than the common oak. On this live the kermes insects.

QUERCUS INFECTORIA. (Willd.) *Gall oak.* Asia Minor.

Excrescences, *Nut Galls*, *Gallæ*, very astringent, tonic, antiseptic; those from which the insect has not escaped are the most esteemed; imported from Aleppo. (G.) From this the *Oak galls* of the shops are all obtained. (L.) As nut galls contain a larger portion of tannic acid than any other known vegetable production, they possess in the highest degree the properties of an astringent; they are used as a tonic in intermittents, as an astringent in hemorrhages; as a chemical antidote in cases of poisoning by ipecacuanha, emetine, opium, colchicum, nux vomica, and others whose activity depends on an organic alkali; they are also employed as a topical astringent in relaxed uvula, gleet, leucorrhœa, flabby ulcers with profuse discharge, piles, &c.; the dose of the powder is from 10 to 20 grains. (Pereira.)

QUERCUS NIGRA. (Ph.) *Q. tinctoria, Quercitron, Black oak.* North America.

Bark used in dyeing yellow; imported from America. (G.)

*QUERCUS PEDUNCULATA. (Willd.) (E. B. 1342.) *Q. robur, British oak.*

Fl. May. Large tree. Woods and hedges.

Bark, *Quercus cortex*, chiefly used for tanning leather; astringent, febrifuge, gr. xv. to ʒss. every two hours; also externally in fomentation; a decoction of the bark, with some alum, very useful in relaxations of the uvula; seeds, *Okecorn, Acorns, Glandes quercinæ*, and their calyces, *Cups, Cupulæ*, as also the wood, leaves, and the excrescences produced by the bite of insects, *Oak apples*, are equally astringent, and of great use in tanning and dyeing. *Tanner's bark*, the exhausted bark left after tanning leather, used by gardeners to produce a slight equable heat by its fermentation; *Tan balls*, the muddy sediment of tan pits, used for summer fuel. (G.) The French used the bark extensively, during the last war, as a substitute for *Cinchona*. (L.)

QUERCUS SESSILIFLORA. (Salisb.)

Has similar properties. (L.)

QUERCUS SUBER. (Willd.) *Cork tree.* South of France.

Bark, *Cork, Suber*, very light, elastic, astringent, more used in stopping vessels than in medicine. The bark of the young branches is used by tanners, under the name of *Alcornoco bark.*

SALIX. (De Cand. Bot. Gal. 423. Endl. Gen. Pl. (*Salicineæ*) 290.)

*SALIX ALBA. (Linn.) (E. B. 2430.) *Salix, White willow.*

Fl. yellow. April, May. Large tree. Marshy woods.

Bark, *Salicis cortex, P. D.*, very bitter, febrifuge, substituted for Peruvian bark; leaves astringent, used in tanning. (G.) According to Smith, the bark of this species, although valuable in the treatment of agues, is inferior to that of *S. Russelliana;* it is, nevertheless, the kind recommended by Mr. Stone in 1763. (L.)

*SALIX AMYGDALINA. (Linn.) (E. B. 1936.) *Almond-leaved willow.*

Fl. yellowish. Small tree. Banks of ditches and rivers.

SALIX BABYLONICA. (Linn.) *Weeping willow.* Persia.

*SALIX CAPREA. (Linn.) (E. B. 1488.) *Great round-leaved sallow, Sallow.*

Fl. yellow. April, May. Small tree. Woods and dry pastures.

SALIX ERIOCEPHALA. (*Bark, salix, P. U. S.*) North America.

*SALIX FRAGILIS. (Linn.) (E. B. 1807.) *Crack willow.*

Fl. yellow. April, May. Small tree. Banks of rivers and marshy ground.

*SALIX HERBACEA. (Linn.) (E. B. 1907.) *Least willow.*

Fl. June. Small shrub. Lofty mountains in Wales.

*Salix Helix. (Linn.) (E. B. 1343.) *S. monandra, Yellow dwarf willow, Rose willow.*
A variety of

*Salix purpurea. (Linn.) (E. B. 1388.) *Bitter purple willow, Norfolk purple willow.*
Fl. yellowish. March, April. Large shrub. Norfolk.

*Salix viminalis. (Willd.) (E. B. 1898.) *Common osier.*
Fl. yellow. April, May. Large shrub. Osier grounds.
Barks very bitter, febrifuge; substituted for *Peruvian bark;* leaves astringent, used in tanning. (G.)

*Salix pentandra. (Linn.) (E. B. 1805.) *S. Laurea, Bay willow, Sweet willow.*
Fl. yellowish. May, June. Small tree. Banks of rivers, &c.
Bark, the original *Willow bark*, recommended as a febrifuge; leaves aromatic, yield prussic acid by distillation, when dried with one-thirtieth of potash; dye silk, linen, and woollen, impregnated with alum, of a fine yellow. (G.) Nees von Esenbeck prefers the bark of this to that of any other species; there is an aroma in it which the others want. (L.)

*Salix Russelliana. (Smith.) (E. B. 1808.) *Bedford willow.*
Fl. yellow. April, May. Large tree. Marshy woods and osier grounds.
Sir James Smith tells us this is the most valuable officinal species, and that if practitioners have sometimes been disappointed in its use, they probably chanced in such cases to give *S. fragilis*, an allied, but different species, which is almost inert. (L.)

Ulmus. (De Cand. Bot. Gal. 421. Endl. Gen. Pl. (*Ulmaceæ*) 275.)

*Ulmus campestris. (Linn.) (E. B. 1886.) *Ulmus, Common small-leaved elm.*
Fl. reddish-purple. March, April. Large tree. Hampshire, Sussex, &c.
Exudes *Ulmine;* inner tough bark, *Ulmi cortex*, astringent, febrifuge; leaves vulnerary. (G.) The inner bark of the elm is demulcent and diuretic; it is also slightly astringent, and therefore a feeble tonic; it has been used in some skin diseases, but is rarely resorted to. Dr. Pereira mentions *U. glabra* as another species officinally employed; the bark should be stripped in the spring. (L.) Lysons recommended the decoction of this bark in cutaneous eruptions; and Dr. Lettsom found it successful in ichthyosis; it has now fallen into disuse. (Pereira.)

Ulmus chinensis. (P. S.) East Indies.
Leaves used as tea.

Ulmus effusa. (Willd.) *U. pedunculata.* South of Europe.
Qualities the same as those of *U. campestris.*

Ulmus fulva. (Ph.) *Slippery elm.* America.
Inner bark, *Ulmus, P. U. S.*, febrifuge.

Order 135.—SAURUREÆ. (Endl. Gen. Pl. 266. Lindl. Nat. Syst. 184.)

Flowers naked, seated upon a scale, hermaphrodite; *stamens* six, hypogynous, persistent, filaments slender; *anthers* two-lobed, bursting longitudinally; *ovaries* four, each distinct, with one ascending ovule, and a sessile recurved stigma, or connate into a three or four celled pistil, with a few ovules ascending from the edge of the projecting semi-dissepiments; *fruit*, either consisting of four fleshy, indehiscent nuts, or a three or four celled capsule, opening at the apex, and containing a few ascending seeds; *seeds* with a membraneous integument; *embryo* minute, lying in a fleshy lenticular sac, seated on the outside of hard mealy albumen, at the end most remote from the hilum. *Herbaceous plants* growing in marshy places, or floating in water; *leaves* alternate, with stipules; *hairs* jointed; *flowers* growing in spikes.

Aponogeton. (Royle.)

Aponogeton monostachyon. (Willd.) India.

Roots esculent, nearly as good as potatoes, and much esteemed by the natives. (O'Sh.)

Saururus. (Endl. Gen. Pl. 266.)

Saururus vernus. *Mathuskea.* North America.

Root fresh and roasted used as an emollient poultice, and to allay inflammation. (G.)

Order 136.—PIPERACEÆ. (Endl. Gen. Pl. 265. Lind. Nat. Syst. 185.)

Flowers naked, hermaphrodite, with a bract on the outside: *stamens* definite, or indefinite, arranged on one side, or all round the ovary, to which they adhere more or less; *anthers* 1—2 celled; *ovary* superior, simple, one-celled, containing a single erect ovule; *stigma* sessile, simple; *fruit* somewhat fleshy, indehiscent, one-celled, one-seeded; *seed* erect; *embryo* placed in a fleshy sac, opposite the hilum, on the outside of the albumen. *Shrubs*, or *herbaceous plants*, with opposite, exstipulate *leaves*, and generally sessile *flowers*, arranged in spikes.

Herbs aromatic, seeds hot, used as spices.

Peperomia. (Lindl. Nat. Syst. 186. Endl. Gen. Pl. (*Piper*) 265.)

Peperomia peltata. (Diet.) *Piper peltatum.* (Linn.) Brazil.

Fruit used externally in swellings and dropsy. (G.) The fruit called *Cuapeba* or *Broad-leaf*, in Brazil; used in decoction as a powerful diuretic. (L. ex Martius.)

Peperomia umbellata. (Kunth.) *Piper umbellatum.* (Linn.) *Santa Maria leaf.* South America.

Herb, in syrup, used in colds and coughs. (G.) The roots of this plant (the *Periparaba* of Rio de Janeiro and St. Paul's, *Caapeba* in Minas Geraes) have a distinguished place among the domestic remedies of Brazil; they have been used with great effect in obstructions of the abdominal organs, which, together with general debility, are a frequent consequence of intermittent fevers; they increase the activity of the lymphatic system in particular, produce a speedy effect, and promote all the secretions; the leaves are often prescribed as tea for swellings of the glands. (L. ex Martius.)

Piper. (Endl. Gen. Pl. 265.)

Piper Afzelii. *Guinea cubebs.* Sierra Leone.

This plant gave rise to the statement that *Cubebs* are obtained from Guinea; it is extremely different from either *P. cubeba* or *caninum*, and the quality of its fruit has still to be ascertained. (L.)

PIPER AMALAGO. (Mill.) *Pepper elder.* Jamaica.

Used externally in baths and fomentations. (G.) Leaves and young shoots discutient, root in infusion resolutive, sudorific, diaphoretic. (L.)

PIPER ANGUSTIFOLIUM. (Ruiz. and Pav.) *Artanthe elongata.* (Miguel.) *Piper elongatum.* (Vahl.) *Stephensia elongata.* (Kunth.) *Narrow-leaved pepper, Matico. Soldier's herb.* South America.

Decoction used in venereal diseases. (G.) The leaves have been strongly recommended as a styptic.

PIPER ANISATUM. (H. B. et Kunth.) South America.

Leaves and fruit have the smell and taste of anise: a decoction of the latter used to wash ulcers. (L.)

PIPER BETLE. (Linn.) *Chavica Betle.* (Miguel.) *Betle pepper. Betel.* East Indies.

Leaves bitter, stomachic, tonic, highly aphrodisiac, used as a masticatory with *Areka nut.* (G.) Leaf chewed by the Malays with lime and slices of the nut of *Areca oleracea*, or the *Pinang.* It produces intoxicating effects, stimulates powerfully the salivary glands and digestive organs, and diminishes the perspiration of the skin. (L.)

PIPER CANINUM. (Rumph.) Java and Prince of Wales's Island.

Dr. Blume considers that the *Cubebs* of commerce are chiefly furnished by this species, which is quite distinct from *P. cubeba;* the fruit is smaller and shorter stalked, having a distinct anise flavour, and less pungent than in that species. (L.)

PIPER CARPAPIGA. *Carpapiga.*

Leaves used in dyspepsia, and to preserve stuffed animals from insects. (G.)

PIPER CHABA. (Hunt.) Indian Archipelago.

Properties the same as those of *P. longum.* (L.)

PIPER CORDIFOLIUM.

Acrid.

PIPER CRYSTALLINUM. *Peperomia crystallina.*

Has the odour of anise, and may be used for it. (G.)

PIPER CUBEBA. (Linn.) *Cubeb.* Java and Prince of Wales's Island.

Fruit, *Cabob pepper, Tailed pepper, Cubebæ, Cubeba,* the same qualities as the other peppers, used in cookery as a spice, and to ornament poultry, stuck in rows on the sides; also in gonorrhœa; ʒ ss. to ʒ iss three times a-day, but in India ʒ iij. six or eight times a-day. (G.) The ripe fruit is called *Cubebs* in the shops; dried and pounded, it is aromatic, pungent, stimulant, and purgative, and acts as a specific in arresting gonorrhœal discharges. (L.)

PIPER INEBRIANS.

Green herb, used to make an inebriating drink, as may indeed be most of this genus. (G.)

PIPER LONGUM. (Linn.) *Chavica Roxburghii.* (Miguel.) *Long pepper vine.* India.

Unripe fruit, *Long pepper*, *Piper longum*, *Piperis longi fructus*, opening, attenuant, stimulant, in doses similar to those of the P. nigrum. *Elephant pepper* is a larger variety of this species. (G.) Female spikes dried form the *Long pepper* of the shops. Root, and the thickest part of the stems, cut into small slices, and dried, are much consumed for medical purposes in India, under the name of "*Pippula moola.*" (Roxb.) The effects of "*Long pepper*" are analogous to those of "*Black pepper;*" some consider it less powerful, and others are agreed on its being the more acrid of the two. (L.)

PIPER METHYSTICUM. (Forst.) *Ava.* South Sea Islands.

Used in tincture against chronic rheumatism; macerated in water, it forms an intoxicating beverage, of which the Otaheitans make use to cure venereal affections; they make themselves drunk, after which very copious perspiration comes on; this lasts three days, at the end of which time we are told the patient is cured. (L.)

PIPER NIGRUM. (Linn.) *P. aromaticum.* (Poir.) πεπερι. (*Dioscorid.*) *Black pepper*, *Black pepper vine.* East and West Indies.

Herb acrid, aromatic, stimulant, sialogogue. Berry, *Black pepper*, *Mellaghoo*, *Piper nigrum*, *Piperis nigri baccæ*, the same; also much used in cookery as a spice, particularly in pilaus, mullaghootanies and curries, and in preserving lampreys and ormiers; dose gr. v. to ℈j., and in larger doses in intermittent fevers; also used to drive away insects: *White pepper*, *Piper album*, made by soaking black pepper in salt water, or rubbing off the outside skin, or by merely rubbing the over-ripe berries that fall from the vines, is milder. (G.) The hot, acrid black pepper of the shops consists of the berries dried with the pulp adhering; the white pepper is the same thing, only the pulp is washed off before the fruit is dried: it is principally used as a condiment to stimulate the stomach, and promote digestion; as a medicine, it is employed in the form of ointment, mixed with lard, against tænia capitis; in affections of the mouth and throat, requiring a powerful acrid, such as relaxed uvula, or paralysis of the tongue, it may be employed as a masticatory; in spirit and water it is a popular remedy for preventing the return of a paroxysm of intermitting fever. A crystalline substance called *Piperine*, obtained from this spice, has been recommended and employed by the Italians as a febrifuge in intermittent fevers; it is said to be more certain and speedy, and also milder in its operation than the cinchona alkalies. In excessive doses pepper is a dangerous stimulant. (L.)

PIPER OBTUSIFOLIUM. (Willd.) *Mecaxochitle*, *Small American long pepper.* West Indies.

Leaves used to flavour chocolate. (G.)

PIPER RETICULATUM. (Linn.) *Jaborand.* West Indies, Brazil.

Juice an antidote against the poison of mushrooms and cassada. (G.) The roots of this plant, called *Jaboranda* in Brazil, and in a less

degree, the ripe catkins, are used as stimulants on account of their pungent aromatic qualities. The root is a very powerful sialogogue, and often cures nervous toothache. The leaves, bruised, are applied with success to the bite of serpents. (L.)

PIPER SIRIBOA. (Willd.) *Chavica Siriboa.* (Miguel.) East Indies.

Employed in the same way as *P. betle.*

PIPER SYLVATICUM. (Roxb.) *Paharipeepul, Mountain long pepper.* Bengal.

Used in Bengal, both green and ripe, as long pepper.

PIPER TRIOICUM. (Roxb.) India.

Fruit exceedingly pungent, reckoned by pepper merchants at Madras equal, if not superior, to the best pepper of the Malabar coast or Ceylon. See Roxb. l. c., for important matter relating to the pepper vines.

ORDER 137.—CONIFERÆ. (De Cand. Bot. Gal. 431. Endl. Gen. Pl. (*Divided into several Orders*) 258.)

Flowers monœcious, or diœcious, disposed in a catkin. *Male fl. Scales* numerous, variously arranged, either bearing or covering the anthers, perigone none; *anthers* various in number, one or many celled, either inserted on bractæiform scales, or supported by a pedicel. *Female fl. Scales* bractæiform, variously arranged, sometimes becoming enlarged and succulent after flowering, or adnate to the fruit; *cupula* generally double, rarely simple, one-flowered, surrounding the ovary (perigone ?); *ovary* one; *style* sessile, single, small; *pericarp* indehiscent, one-celled, coriaceous, or osseous; *seed* one, pendulous, albuminous; *embryo* straight, in the axis of the fleshy and oily albumen; *radicle* directed towards the umbilicus, often attenuated at the apex, and adnate to the albumen; *cotyledons* two, opposite, or many in a whorl. *Resinous trees*, or *shrubs: leaves* alternate, or whorled, or rarely opposite, frequently acerose, persistent.

ABIES. (De Cand. 434. Endl. Gen. Pl. (*Abietinæ, Pinus.*) 260.)

ABIES BALSAMEA. (Marsh.) *Picea balsamea.* (Loud.) *Pinus balsamea.* (Linn.) *Balm of Gilead fir.* North America.

The oleo resin, called *Canada balsam*, is furnished by this species. (L.)

ABIES CANADENSIS. (Psh.) *Pinus canadensis, Hemlock spruce fir.* North America.

Young roots, *Turiones pini*, in beer, antiscorbutic, cooling, antiseptic, and tonic. (G.) Said to yield an oleo resin analogous to *Canada balsam.* (Pereira.) The hardened resinous exudation, which resembles Burgundy pitch, is used in America under the names of *Hemlock gum, Hemlock pitch*, and *Canada pitch.*

ABIES EXCELSA. (D. C.) *Pinus abies, Norway spruce fir, Spruce fir.* Alps.

Exudes common *Frankincense*, or *Thus*, and yields *Burgundy pitch* by incision; tops used to make *Spruce beer.* (G.)

ABIES NIGRA. (Michx.) *Pinus nigra, Black spruce fir.* America.

The concentrated aqueous decoction of the young branches is *Essence of spruce*, used in the preparation of *Spruce beer.* (Pereira.)

**ABIES PICEA. (Lindl.) *A. pectinata.* (D. C.) *A. taxifolia, Pinus picea.* (Linn.) *Picea pectinata.* (Loud.) *Common fir, Silver fir-tree, Pitch-tree.*

Fl. May. Large tree. Cultivated in woods. Native of the Alps.

Yields *Strasburgh turpentine*, by puncturing the small vesicles of the bark in which it is contained, and *Fir resin*, by larger incisions. (G.)

CALLITRIS. (Endl. Gen. Pl. (*Cupressineæ*) 259.)

CALLITRIS QUADRIVALVIS. (Vent.) *Thuja quadrivalvis, T. articulata.* (Desf.) *Arar-tree.* North of Africa.

Yields *Gum sandarach.* (G.) Yields the resinous substance called *Sandarach*, from which is prepared the pounce employed in rendering parchment fit to write upon. (L.)

CUPRESSUS. (De Cand. Bot. Gal. 432. Endl. Gen. Pl. 259.)

**CUPRESSUS FASTIGIATA. (D. C.) *C. sempervirens.* (Linn.) *Cupressus, Cypress.*

Fl. April. Large tree. Native of South of Europe.

Wood and berries astringent, vermifuge; strobiles, *Nuces cupressus*, astringent.

DAMMARA. (Endl. Gen. Pl. (*Abietinæ*) 261.)

DAMMARA . . . . . *Agathis loranthifolia, Pinus dammara, Dammar pine.* East Indies.

Yields *Ava dammar.*

DAMMARA AUSTRALIS. (Rumph.) *Kawrie tree.* New Zealand.

Yields *Cowdie pine resin*, used in varnishes. The finest masts in the navy are made from this tree.

EPHEDRA. (De Cand. Bot. Gal. 432. Endl. Gen. Pl. (*Gnetaceæ*) 263.)

EPHEDRA DISTACHYA. (Linn.) *Shrubby horse-tail.* France.

Berries sweet, eatable, used in lientery and menorrhagia, given in wine. (G.)

JUNIPERUS. (De Cand. Bot. Gal. 432. Endl. Gen. Pl. 258.)

JUNIPERUS BERMUDIANA. (Willd.) *Jamaica cedar.* Bermudas.

Wood used for enclosing crayons.

*JUNIPERUS COMMUNIS. (Linn.) (E. B. 1100.) *Juniperus, Juniper.*

Fl. May. Large shrub. Woods and heaths.

Tops, *Juniperi cacumina*, diuretic, sudorific, antisyphilitic, may be substituted for *Guaiacum;* fruit, *Juniperi baccæ*, incisive, discussive, very stomachic, infusion drank as tea; if the seeds are broken, they communicate a bitter flavour. (G.) The fruits called *Juniper berries* are analogous in operation to other terebinthinate substances; they promote the secretion of urine, in large quantities produce irritation of the bladder and heat in the urinary passages, are sudorific, carminative, and are supposed to stimulate the uterus; Mr. Alexander says, that the oil, in doses of four drops, is the most powerful of all diuretics; they are administered in leucorrhœa, gonorrhœa, gleet, &c. (L.) Juniper berries require to remain on the tree two years before they are fully ripe; they have a peculiar aromatic odour, and a sweetish, pungent, bitterish taste when chewed; in distillation with water, they

yield a volatile terebinthinate oil of a greenish colour, on which their virtues depend; the flavour and diuretic properties of hollands depend on this oil; it is also supposed to be used for the purpose of flavouring English gin, but for this purpose oil of turpentine is used. (Lou.)

JUNIPERUS PHŒNICIA. (Willd.) *Oxycedrus, Berry-bearing cedar.* South of Europe.

Wood diaphoretic, by distillation yields *Huile de cade;* berries discutient; exudes *American olibanum.* (G.)

**JUNIPERUS SABINA. (Linn.) *Sabina, Savine.*

Fl. April. Small shrub. Native of the Alps.

Leaves, *Sabina foliæ,* emmenagogue, producing abortion, diuretic, vermifuge; doses, in powder, gr. xv. to ℈j. or ʒj., twice or thrice a-day; externally escharotic, applied to warts, &c., once a-day. (G.) *Oil of savine* is a powerful local stimulant, acting, when applied to the skin, as a rubefacient and vesicant; swallowed, it occasions vomiting and purging; it is a powerful stimulant, and exercises a specific influence over the urino-genital apparatus; in certain cases of amenorrhœa, it acts as a powerful emmenagogue, and in pregnancy it has a strong tendency to produce abortion; it, however, frequently fails, and can only be given to a woman at the risk of her life; savine powder, mixed with verdigris, is used as an efficacious application for the removal of venereal warts, and in the form of ointment it is an excellent means of promoting discharge from blistered surfaces. (L.) As an external local stimulant or escharotic, the dried leaves in powder are applied to warts, flabby ulcers, and carious bones, and the expressed juice diluted, or an infusion of the leaves, as a lotion to gangrenous sores, scabies, and tinea capitis, or mixed with lard and wax, as an issue ointment. (Lou.)

JUNIPERUS VIRGINIANA. (Linn.) *Red cedar.* United States.

Wood, *Carolina cedar,* used for enclosing crayons; leaves used as *Savine.* (G.) Similar in effects to *J. sabina,* for which it is used in North America as a substitute. (L.)

LARIX (De Cand. Bot. Gal. 434. Endl. Gen. Pl. (*Abietinæ*) *Pinus* 260.)

**LARIX EUROPÆA. (D. C.) *L. communis, Larix, Abies larix.* (Rich) *Pinus larix,* (Linn.) *Larch.*

Fl. reddish. May. Large tree. Native of the Alps.

Exudes *Larch gum* and *Briançon manna,* yields by boring *Larch turpentine.* (G.) *Venice turpentine* is obtained from the trunk, a saccharine matter, called *Manna of Briançon,* exudes from the branches, and when the larch forests in Russia take fire, a gum issues from the trees during their combustion which is called *Gummi Orenburgense,* and which is wholly soluble in water like gum arabic. (L.)

**LARIX CEDRUS. (Mill.) *Pinus cedrus,* (Linn.) *Cedar of Lebanon.*

Fl. May. Large tree. Native of Lebanon and Syria.

Wood astringent, antiseptic. (G.)

PINUS. (De Cand. Bot. Gal. 433. Endl. Gen. Pl. (*Abietinæ*) 260.)

PINUS CEMBRA. (Linn.) *Siberian stone pine.* Siberia.

Yields *Briançon turpentine;* nuts, *Cembra nuts,* eatable, yield oil

by distillation; the shoots yield true *Riga balsam*, *Balsamum Carpaticum*, or *Balsamum Libani.* (G.) said to yield *Carpathian balsam.* (L.)

PINUS MARITIMA. (Lamb.) *P. pinaster*, (Lamb.) *Cluster pine*, *Pinaster.*

Yields *French* or *Bordeaux turpentine.* (G.) *Bordeaux turpentine*, which has the property of solidifying with magnesia, is procured from this plant. (L.)

PINUS PALUSTRIS. (Ph.) *Pitch pine*, *Swamp pine.* North America.

Yields *American turpentine.* (G.)

PINUS PINEA. (Willd.) *Stone pine.* South of Europe.

Nuts, *Zirbel nuts*, *Pine nuts*, kernels pectoral, eaten raw or preserved; used in emulsions; yield oil by expression. (G.) Seeds eaten throughout Italy both by the poor and rich. They are sweet as almonds, but with a slight flavour of turpentine. (Lou.)

PINUS PUMILIO. (Willd.) *Mountain pine*, *Mugho pine.* South of Europe.

Exudes *Hungarian balsam.* (G.)

*PINUS SYLVESTRIS. (Linn.) (E. B. 2460.) *Red deal*, *Scotch fir.*

Fl. May, June. Large tree. Highland mountains.

Exudes *White resin*, yields by incision common *Turpentine;* inner bark eaten raw, or made into cakes and baked; *Tar* is distilled from it, and *Lamp-black* obtained by burning its refuse branches in tents. (G.)

PINUS TÆDA. (Ph.) *Frankincense pine. Loblolly* or *Old field pine.* North America.

Yields *Common turpentine*, but of a less fluid quality than that which flows from *P. palustris.* (Pereira.)

The medicinal substances obtained from these and other coniferous plants are, 1. The oleo-resinous juices called *Turpentine;* 2ndly. The volatile oil obtained therefrom by distillation, called *Oil of turpentine;* 3rdly. The resinous residuum known by the name of *Rosin;* 4thly. *Tar* and *Pitch.* There are various kinds of turpentine, obtained from different trees of the fir, pine, &c., kind, as *Venice turpentine*, *Strasburgh turpentine*, &c. &c. Upon submitting turpentine to distillation, *Oil of turpentine* is produced, and the residuum is *Rosin* or *Common resin.* On burning the fir-trees in such a manner as to prevent free access of the outward air, and thus to produce a slow combustion, *Tar* is produced, and when this is submitted to distillation, an acid liquor, (*Pyroligneous acid,*) and a volatile oil, (*Oil of tar,*) pass over, and the residuum in the still is *Pitch.* Turpentine and oil of turpentine have been employed internally in hæmorrhages, blennorrhœa, puerperal and ordinary fevers, rheumatism, sciatica, and other neuralgic affections, in nephritic diseases, suppression of urine, infantile diabetes, dropsy, spasmodic diseases, obstinate constipation, &c., and externally as a rubefacient in rheumatism, sprains, neuralgic affections of the extremities, &c. Powdered rosin has been applied to wounds to check

hæmorrhage; but the principal value of rosin is in the formation of plasters and ointments, to which it communicates great adhesiveness, and some slightly stimulant properties. Tar has been applied externally in various forms of obstinate skin diseases, and as an application to foul ulcers. It is sometimes, also, used internally. Pitch has been employed internally in ichthyosis and in other obstinate skin diseases; its principal use, however, is in the form of an ointment as an application to cutaneous affections of the scalp. (Pereira.)

SALISBURIA. (Endl. Gen. Pl. (*Taxineæ*) 262.)

SALISBURIA ADIANTIFOLIA. (L. T.) *Gingko biloba, Gingko.* Japan.
Seeds yield oil. (G.) Seeds large and eatable. (L.)

TAXODIUM. (Endl. Gen. Pl. 259.)

TAXODIUM. *Cupressus disticha.* (Linn.) *Schubertia disticha.* (Mirb.) *Virginia cypress.* North America.
Leaves dye cinnamon colour. (G.) Yields *black* and *white cypress wood.*

TAXUS. (De Cand. Bot. Gal. 432. Endl. Gen. Pl. 261.)

*TAXUS BACCATA. (Linn.) (E. B. 746.) *Taxus, Yew.*
Fl. March. Tree. Mountain woods and cultivated places.
Wood very hard, thought to be poisonous, as were also the berries, *Glob berries*, but they may be eaten; leaves poisonous to cattle; Pollen may be substituted for that of Lycopodium. (G.) Leaves fetid, very poisonous, especially to horses and cows; berries are not dangerous; seeds said to be unwholesome. On the authority of an Italian physician, it is stated that yew-leaves administered in small doses to man have a power similar to that of digitalis, on the action of the heart and arteries, reducing the circulation, and if persisted in too long, or given in too large doses, as certainly fatal. Yew is, however, said to have one decided advantage over digitalis, by its effects not accumulating in the system, so that it is a much more manageable and more efficacious remedy. (L. ex. Burnett.)

TAXUS ELONGATUS. *Yellow wood.*
Wood scentless; sold for *Yellow sanders*, but of little value. (G.)

TAXUS NUCIFERA. Japan yew.
Berries eatable, aromatic. (G.)

THUJA. (Endl. Gen. Pl. 258.)

THUJA OCCIDENTALIS. (Willd.) *Cédre blanc*, Fr. *American arbor vitæ.* North America.
Leaves alexiterial.
The wood, when burnt, gives out an agreeable smell, and on this account was formerly used in sacrifices. The leaves, formed into a salve, are used by the Indians to cure rheumatism.

THUJA ORIENTALIS. (Willd.) *Chinese arbor vitæ.* China.
Resembles T. occidentalis in appearance.

Class II. ENDOGENÆ, or MONOCOTYLEDONES.

Leaves with parallel veins; stem with no distinction of wood, pith, and bark; increasing in growth by additions from the inside; flowers with a ternary division; cotyledon one, or if two, alternate.

Sub-Class I.—PETALOIDEÆ.

Calyx and corolla both present in three or six divisions, or imperfectly developed in the form of herbaceous scales upon a spadix.

Order 138.—HYDROCHARIDEÆ. (De Cand. Bot. Gal. 435. Endl. Gen. Pl. 160.)

Flowers inclosed in a spathe, dicœcious, rarely hermaphrodite, *male flower*, *spathe* sometimes one-flowered, the flower sessile, or pedunculated, or many-flowered, the flowers pedunculated; *female* and *hermaphrodite flower*, *spathe* one-flowered, flower sessile; *perigone* six-cleft, in the female flower adherent to the ovary; outer lobes foliaceous, inner ones petaloid, longer; *stamens* 1—13, inserted on the ovary in hermaphrodite flowers, but on the site of the ovary in male flowers; *anthers* two-celled; *ovary* inferior; *style* often wanting; *stigmas* 3—6, glandular within, often bifid; *fruit* sometimes crowned by the persistent limb of the perigone, oblong, indehiscent; *pericarp* fleshy, pulpy within, sometimes unilocular, sometimes sub-multilocular, by the greater or less prolongation of the dissepiments; *seeds* numerous, attached either to the parieties, or to the dissepiments, the integuments membraneous, hard; *embryo* cylindrical, straight; *albumen* none. *Aquatic herbs*, with sessile, or petiolated, entire, or slightly denticulated *leaves*.

Hydrocharis. (De Cand. Bot. Gal. 436. Endl. Gen. Pl. 163.)

*Hydrocharis morsus ranæ. (Linn.) (E. B. 808.) *Morsus ranæ*, *Frog bit.*

Fl. white. July. Perennial. Ditches and ponds.

Root astringent.

Stratoites. (De Cand. Bot. Gal. 436. Endl. Gen. Pl. 163.)

*Stratoites aloides. (Linn.) (E. B. 379.) *Aloe palustris*, *Stratoites*, *Pistia aloides*, *Fresh-water soldier*, *Water seagreen.*

Fl. white. July. Perennial. Lakes and ditches in the east of England.

Used in wound-drinks, refrigerant.

Order 139.—ALISMACEÆ. (De Cand. Bot. Gal. 437. Endl. Gen. Pl. 127.)

Perigone free, six-partite, coloured; *stamens* 6—9, rarely more; *ovaries*, *styles*, and *stigmas* 3—6, or more; *capsules* indehiscent, one or many seeded, two-valved: *embryo* straight, or incurved; *albumen* none. *Aquatic herbs*, with radicle, alternate sheathing *leaves*; *flowers* in spikes, or umbels; hermaphrodite, rarely monœcious.

Alisma. (De Cand. Bot. Gal. 437. Endl. Gen. Pl. 127.)

*Alisma Plantago. (Linn.) (E. B. 837.) *Plantago aquatica*, *Great water plantain.*

Fl. white, or pale-rose coloured. July. Perennial. Margins of lakes and wet places.

Root used in hydrophobia. (G.) It has now fallen into deserved neglect. (O'Sh.)

HYDROGETON. (Lindl. Nat. Syst.)

HYDROGETON FENESTRALIS. *Ouvirandia fenestralis.*
Root bulbous, eaten when roasted. (G.)

SAGITTARIA. (De Cand. Bot. Gal. 438. Endl. Gen. Pl. 128.)

*SAGITTARIA SAGITTÆFOLIA. (Linn.) (E. B. 84.) *Sagitta aquatica. Arrow head.*
Fl. whitish. July. Perennial. Ditches and margins of rivers.
Herb acrid, opening, and incisive; root bulbous, very nutritive. (G.)

ORDER 140.—POTAMEÆ. (De Cand. Bot. Gal. 439. Endl. Gen. Pl. (*Najadeæ.*) 229.

Flowers hermaphrodite, or of separate sexes; *spathe*, or *perigone*, more or less deeply divided; *ovaries* numerous, definite, inserted on a common receptacle, or in a central spadix; *style* one, or none; *stigma* simple; *stamens* definite in number, inserted on the receptacle, or on the spadix; *capsules* indehiscent, one-celled, one-seeded; *seed* inverse, pendulous; *albumen* none; *embryo* straight, or incurved; *radicle* turned to the point opposite to the hilum. *Aquatic herbs*, with simple, generally alternate *leaves*.

POTAMOGETON. (De Cand. Bot. Gal. 439. Endl. Gen. Pl. (*Najadeæ*) 239.)

*POTAMOGETON NATANS. (Linn.) (E. B. 1822.) *Potamogeton, Sharp-fruited, broad-leaved pond weed.*
Fl. June, July. Perennial. Stagnant waters and slow streams.
Cooling, used in itchings, and against old ulcers. (G.)

ZOSTERA. (De Cand. Bot. Gal. 440. Endl. Gen. Pl. 230.)

*ZOSTERA MARINA. (Linn.) (E. B. 467.) *Z. oceanica, Z. trinerva, Alga, Grass wrack.*
Fl. May, September. Perennial. Creeks and salt-water ditches.
Cooling, used in inflammations and the gout. The charcoal used in strumous tumours. (G.)

ORDER 141.—PANDANACEÆ. (Endl. Gen. Pl. 242. Lindl. Nat. Syst. 361.)

Flowers diœcious or polygamous, arranged on a wholly-covered spadix; *perianth* wanting; *males*, *filaments* with simple anthers; *anthers* two-celled; *females*, ovaries usually collected in parcels, one-celled; *stigmas* as many as the ovaries, sessile, adnate; *ovules* solitary, erect; *fruit*, either fibrous drupes, usually collected in parcels, each one-seeded, or many-celled berries, with polymorphous cells; *albumen* fleshy; *embryo* in its axis erect, (not slit on one side,) plumule inconspicuous; *stem* arborescent, usually sending down aerial roots, sometimes weak and decumbent; *leaves* imbricated in three rows, long, linear, lanceolate, amplexicaul, with their margins almost always spiny; *floral leaves* smaller, often coloured. (L.)

BROCIMUM.

BROCIMUM ALICASTRUM. *Bread nut.* Jamaica.
Fruits eatable.

CARLUDOVICA. (Endl. Gen. Pl. 243.)

CARLUDOVICA PALMATA. (R. et. Pav.) *Jipijapa.* South America.
The celebrated Panama hats are plaited from the unexpanded leaves

of this tree, which has much resemblance to the palms. In the Isthmus the plant is called *Portorico* and also *Jipijapa*. The plant is found diffused all along the coast as far as Peru and Chili; and in Ecuador, a whole district derives its name from it. It is common in Panama and Darien, particularly in half-shady places. It is also found all along the western shores of New Granada, and Ecuador. The hats are manufactured principally in Veraguas and Western Panama, but all known by that name are not made in the Isthmus; the greater portion are made in Manta, Monte Christi, and other parts of Ecuador. The hats are worn through nearly the whole of the American continent and West Indies, and would probably be much used in Europe were it not for their high price. These hats are very light and flexible, consist of a single piece only, may be rolled up and put in the pocket without injury, and admit of easy cleaning when dirty.

PANDANUS. (Endl. Gen. Pl. 242.)

PANDANUS. . . . . (Willd.) *Vaquois.*

Seeds esculent. (G.) In the Sandwich and other South Sea Islands, a species of Pandanus is used for making mats; the branches being of a soft spongy juicy nature, cattle will eat them very well, when cut into pieces; they call it *Wharra tree* at Otaheite. (Lou.)

PANDANUS ODORATISSIMUS. (Willd.) *Keora.* India.

Flowers exhale a very pervading perfume; a distilled water is prepared from them, whose properties are gently stimulant and diaphoretic. (O'Sh.)

PHYTELEPHAS. (Endl. Gen. Pl. 243.)

PHYTELEPHAS MACROCARPA. *Calezza de negro.* Tropical America.

PHYTELEPHAS MICROCARPA. *Vegetable ivory.* Tropical America.

Milk of the fruit becomes hard like ivory, and of a fine taste. (G.) Buttons are turned from the hard albumen of Phytelephas, or the Tagua plant. (L.) Used very generally as a substitute for ivory in small turned articles.

ORDER 142.—ORCHIDEÆ. (De Cand. Bot. Gal. 442. Endl. Gen. Pl. 185.)

Perigone monosepalous, petaloid, adhering to the ovary, six-cleft, with irregular segments, three external, called the helmet, and three internal; the five upper ones constitute, as it were, the flower, the lower one being the lip, (labellum,) various in form and direction; *ovary* one-celled, with three parietal placentæ; *style* forming part of the column of the stamens; *stigma* a viscid spot, more or less orbicular, at the base, side, or apex of the columnar style; *filaments* of the stamens three, united with the style into a central column, the lateral ones (except in Cypripedium) sterile, sometimes more or less elongated, sometimes very short, or none, the middle one generally antheriferous; *anthers* two-celled, either distinct and adnate to the sides of the style, which is often prolonged beyond them, or approximated, and then the anthers are either parallel to the stigma, immovable and persistent, or terminating the column, moveable, in the form of an operculum, and deciduous; *pollen* granular, the grains cohering by means of a glutinous elastic substance, sometimes easily separable, sometimes homogeneous, and concreted into masses; these pollen masses, after the dehiscence of the cells, become attached to the stigma by means of a filiform process of the stigma, or of a glandular viscid retinaculum

of the pollen; *capsule* one-celled, three-valved, three-carinate, dehiscing laterally; *seeds* numerous, attached to three placentas, which are adnate to the middle of the valves; *testa* loose, reticulated, contracted at each end; *embryo* at the base of a fleshy albumen. *Herbs*, the roots either fasciculated or tuberous, the tubers being ovate or palmate; *stems* rarely divided; furnished with leaves and scales, or naked; *leaves* amplexicaul, entire; *flowers* bracteated, spicate, or solitary, having all their parts inverted, in consequence of the twisting of the ovary.

These plants are esteemed as highly aphrodisiac.

ANGRÆCUM. (Endl. Gen. Pl. 207.)

ANGRÆCUM FRAGRANS. *Faham*, *Fahon*, or *Fahum*.

This is a parasitic plant, the leaves of which are imported from the Mauritius, and on account of its fragrance is much sought after by the Asiatics. It is sufficient to touch the fresh leaves for the fingers to become impregnated with the odour. The dried leaves possess an odour much resembling Vanilla. In the country from whence they are derived, and also in France, a very agreeable tea is prepared from them, which is used as a digestive, and in diseases of the respiratory organs. Mixed with ordinary tea, they impart an agreeable perfume to it.

BLETIA. (Endl. Gen. Pl. 194.)

BLETIA VERECUNDA. (Brown.) *Limodorum altum.* (Linn.) West Indies.

According to Browne, the Cormus is "bitterish, and attended by a clamminess that leaves a light prickly warmth behind it; but this wears off soon, leaving the palate free from every sensation but that of the bitter; when dried, it may be used with great propriety as a stomachic. (L.)

EPIDENDRUM. (Endl. Gen. Pl. 193.)

EPIDENDRUM BIFIDUM. (Aubl.) West Indian Islands, &c.

According to Mr. Schomburgk, the expressed juice is a purgative, taken in doses of a table-spoonful at a time; it is also reckoned in Tortola an anthelmintic and diuretic, &c. (L.)

EPIPACTIS. (De Cand. Bot. Gal. 449. Endl. Gen. Pl. 213.)

*EPIPACTIS LATIFOLIA. (All.) (E. B. 269.) *Serapias latifolia.* (Linn.) *Bastard hellebore*, *Broad-leaved helleborine*, *helleborine.*

Fl. greenish-purple. July, August. Perennial. Woods in mountainous countries.

*EPIPACTIS OVATA. (All.) (E. B. 1548.) *Listera ovata.* (Brown.) *Ophrys ovata*, *Neottia ovata.* (Rich.) *Common tway blade.*

Fl. yellowish green. June. Perennial. Woods and moist pastures. Roots, washed and baked, yield *Salep.* (G.)

EULOPHIA. (Endl. Gen. Pl. 200.)

It appears by the evidence of Professor Royle, that the plant which yields *Salep* in Cashmere, belongs to the present genus, but the specimens obtained by him were not sufficient to enable the species to be ascertained. (L.)

HABENARIA. (Endl. Gen. Pl. 210.)

*HABENARIA BIFOLIA. (Brown.) (E. B. 22.) *Orchis bifolia.* (Linn.) *Satyrium*, *Butterfly satyrion*, *Butterfly orchis.*

Fl. yellowish-white, fragrant. June. Perennial. Moist copses and pastures.

Root yields *Salep*. (G.)

NEOTTIA. (De Cand. Bot. Gal. 448. Endl. Gen. Pl. 213.)

*NEOTTIA SPIRALIS. (Swartz.) (E. B. 541.) *Ophrys spiralis*. (Linn.) *Spiranthes autumnalis*. (Rich.) *Triorchis, Common ladies' traces, Triple ladies' traces*.

Fl. greenish-white, spiral. August, September. Perennial. Chalk hills.

Root yields *Salep*.

ORCHIS. (De Cand. Bot. Gal. 442. Endl. Gen. Pl. 208.)

*ORCHIS FUSCA. (Jacq.) (E. B. 16.) *Great brown-winged orchis, Large military goatstones*.

Fl. helmet, dark-greenish purple; the rest of a paler variegated purple. May. Perennial. Chalky pastures and borders of woods.

Dried leaves have the same scent as the *Tonca bean*, and are used to scent snuff, as are also those of some other species of Orchis. (G.)

*ORCHIS HIRCINA. (Scop.) (E. B. 24.) *Satyrium hircinum, Tragorchis, Lizard orchis, Goatstones*.

Fl. dingy-purplish green; odour hircine. July. Perennial. Chalk hills.

*ORCHIS LATIFOLIA. (Linn.) (E. B. 2308.) *Orchis palmata. Male satyrion, Royal marsh orchis*.

Fl. pale rose-coloured, varying to deep purple. June. Perennial. Marshes and moist meadows.

*ORCHIS MASCULA. (Linn.) (E. B. 631.) *Early purple orchis, Male fool's stones*.

Fl. purple, centre of lip whitish. June. Perennial. Woods and pastures.

*ORCHIS MILITARIS. (Linn.) (E. B. 2675.) *Orchis, Military orchis, French satyrion. Satyrium*.

Fl. helmet pale ash-coloured; lip deep purple, white in the middle. May. Perennial. Chalk hills near Reading.

*ORCHIS MORIO. (Linn.) (E. B. 2059.) *Fool's stones, Green winged meadow orchis*.

Fl. helmet purplish-green; lip purple, pale in the middle, with purple spots. June. Perennial. Meadows and pastures.

*ORCHIS PYRAMIDALIS. (Linn.) (E. B. 110.) *Anacamptis pyramidalis*. (Rich.) *Cynosorchis, Dog's stones, Pyramidal orchis*.

Fl. delicate rose-purple. July. Perennial. Pastures on a clayey or chalky soil.

Roots washed and baked, *Salep*, are nutritive, restorative, and aphrodisiac; *Salep* forms a stiff jelly with potash, ammonia, or magnesia. (G.) It is believed that some species of this genus furnishes the nutritious substance called *Salep*, or *Saloop*, so remarkable as the source of *Bassorine*, and *O. mascula* in particular has been named as the plant whose tubercles are collected; but as that plant does not

grow in Turkey or Persia, the countries whence Salep was originally obtained, there must be some mistake in the statement; it is more likely to be the produce of *O. variegata*, *taurica*, or *militaris*. In the Himalayas, the tubercles of an orchis were seen by Lieut. Hutton to be collected for use under the name of *Salep misri*, but the species is not mentioned. (L.) SALEP is the prepared and dried roots of several orchideous plants, and is sometimes sold in the state of powder. (Pereira.)

VANILLA. (Endl. Gen. Pl. 221.)

VANILLA AROMATICA. (Swartz.) *Epidendron vanilla.* South America.

Pods, *Banilloes*, *Vanilla*, brown, as thick as a quill, covered with an efflorescence, in bundles of five oz. each, dipped in oil, cephalic, stomachic, used to scent chocolate and liqueurs; *Vanillon*, from the Brazils in iron chests, dark coloured; *Pampova*, from the Spanish colonies, thick; *Simarouba*, from St. Domingo, has scarcely any smell; are probably from different species. (G.) Vanilla is employed in this country for flavouring chocolate, ice creams, &c.; on the Continent it is much esteemed as an aromatic stimulant; it has been administered in asthenic fevers, rheumatism, hysteria, impotence of the male, melancholy, &c.; the dose is from eight to twelve grains. (Pereira.)

VANILLA CLAVICULATA. (Swartz.) *Epidendrum claviculatum.* (Swartz.) *Greenwithe.* West Indies.

A decoction is esteemed by the negroes an excellent remedy for syphilis; the expressed juice is also used in cases of recent wounds, whence the French in St. Domingo call it *Liane à blessure.* (L. ex Swartz.)

VANILLA POMPONA, V. SATIVA, and V. SYLVESTRIS, are mentioned by Schiede as yielding Vanilla in Mexico.

ORDER 143. ZINGIBERACEÆ. (Endl. Gen. Pl. 221. Lind. Nat. Syst. 322.)

Calyx superior, tubular, three-lobed; *corolla* tubular, irregular, with six segments in two whorls, the outer three partite, the inner three partite, with the intermediate segment, (labellum,) large, and generally three-lobed; *stamens* 1—3, of which the two lateral ones are abortive; *filament* often extended beyond the *anthers*, which is two-celled, and opening lengthwise; *ovary* three-celled; *style* filiform; *stigma* concave, dilated; *fruit* a three-celled capsule, opening by three valves, bearing each a partition on the middle of its inner surface; *seeds* sometimes accompanied with an arillus; *albumen* farinaceous; *embryo* cylindrical; *radicle* turned toward the hilum. *Herbaceous*, tropical, aromatic *plants*, with a creeping *rhizoma*; simple sheathing *leaves*, and *flowers* arising from spathaceous membraneous bracteæ.

Roots and seeds mostly aromatic, and used as spices.

ALPINIA. (Endl. Gen. Pl. 224.)

ALPINIA GALANGA. (Swartz.) *Amomum galanga*, *Galanga major*, *Maranta galanga*, *Great galangale.* Sumatra.

Roots tuberous, covered with rings, brownish, inside dirty white: a faint aromatic smell, tastes like pepper and ginger mixed. (G.) The

roots are the *Galanga major* of the druggists, a pungent, acrid aromatic, forming a kind of substitute for ginger. (G.)

ALPINIA . . . .? *Amomum . . . .? Costus . . . .? Galanga minor, Small galangale.*

Root warmer and more fragrant than *Galanga major*, outside brown, inside red. In India it is ten times the price of the other; both are warm, stomachic, and emmenagogue. (G.) Besides the larger Galanga, there is a *Galanga minor*, which, according to Fée, is very much smaller, and has more energetic properties than the former, and which comes from China and the Philippines; it is not known what plant produces it. (L.)

ALPINIA EXALTATA. (Meyer.) *A. tubulata, Renealmia exaltata.* (Linn.)

A plant supposed to be at least related to this, if not identical, and called *Corowatti* in British Guayana, is spoken of by Dr. Hancock as a bitterish, pungent, sub-acrid plant, acting as a diaphoretic and diuretic, or in large doses as an emetic, and of great value in dropsies, rheumatism, dysentery, hooping-cough, &c.; the bruised rhizoma is the part used. (L.)

AMOMUM. (Endl. Gen. Pl. 223.)

AMOMUM ANGUSTIFOLIUM. (Sonn.) Madagascar.

Every part, when bruised or wounded, diffuses a strong but pleasant aromatic smell; the fruit is the *Cardamomum majus* of old authors, the great, or *Madagascar cardamom* of Smith; the seeds are said by this latter author to have none of the vehement, hot, acrid taste of *Grains of paradise.* (L.)

AMOMUM AROMATICUM. (Roxb.) Bengal.

Fruit similar in quality to *Cardamoms*, for which it is sold to the druggists in India; the seeds are similar in shape and spicy flavour. (L.)

AMOMUM CARDAMOMUM. (Linn.) Java, Sumatra.

Seeds agreeably aromatic; used by the Malays as a substitute for the true cardamoms of Malabar, the produce of *Elettaria cardamomum;* fruit said by Nees and Ebermaier to be the *Round cardamoms* of the shops. According to Smith, it is the *Amomum verum* of the old apothecaries. (L.) They are officinal in the French Codex, and are principally consumed in the southern parts of Europe. (Pereira.)

AMOMUM CLUSII. (Smith.) *Clusius's Cardamom, Long-seeded Amomum.* West Coast of Africa.

Seeds dark brown, highly polished, as if varnished, have scarcely any flavour. (Pereira.)

AMOMUM CITRATUM. (Pereira.)

This is the *Cardamomum majus* of Dr. Burgess's collection at the College of Physicians. The seeds, which are brownish yellow and shining, have a warm aromatic flavour, resembling that of lemon-grass. When crushed they evolve this odour, and hence the specific name, *citratum.* (Pereira.)

AMOMUM GLOBOSUM. *Round China cardamom.* Mountains of Cochin-China and China.

Capsule thin, round, and oval. Seeds in globular masses. Used in China for restraining abdominal pain, sickness, and diarrhœa.

AMOMUM GRANDIFLORUM. (Smith.) Sierra Leone.

Seeds differ from those of *A. grana paradisi*, in being grey or lead-coloured, much less polished, with a totally different flavour, resembling that of camphor, which they equal in warmth and pungency; as a stimulant or cordial, these seeds appear equal to any cardamoms whatever. (L. ex Smith.)

AMOMUM GRANA PARADISI. (Linn.) *Grana paradisi*, *Grains of paradise*, *Guinea grains*, *Melligetta*, or *Malaguetta pepper*. Guinea.

Seeds aromatic, stimulant; taste very hot and heating, like pepper; used by some in large doses to cure agues; also to give a false strength to wine, beer, vinegar, and other liquors. (G.) Seeds extremely aromatic, hot, and acrid; properties the same as those of other *Amoma*; they are powerfully aromatic, stimulant, and cordial. (L.)

AMOMUM KORARIMA. (Pereira.) *Korarima cardamom*, *Gurágie spice*. Abyssinia.

Seeds rather longer than grains of paradise, roundish or somewhat angular, olive-brown, with an aromatic flavour, but devoid of the very hot, acrid taste of grains of paradise. In Abyssinia they are used as a condiment and in medicine.

AMOMUM MACROSPERMUM. (Smith.) *Large-seeded Guinea amomum*, *Zingiber meleguetta*, (Gaertner.) *Fructus Cajeputi*, (Trew.) *Cardamomum Bandaense*, (Martius.) Sierra Leone. *Mabooboo.*

Seeds greenish-grey, or lead coloured; flavour slightly aromatic. They yield by distillation a volatile oil resembling Cajeput oil, of which they were supposed by Trew to be the real source. (Pereira.)

AMOMUM MAXIMUM. (Roxb.) *Great-winged amomum.* Malay Islands, Java.

Yields *Java cardamoms*, which are not used here. When brought to this country they are usually reshipped for continental uses.

AMOMUM MELEGUETA. (Rosc.) Demerara, probably from Africa.

Yields *Grains of Paradise*, and is cultivated by the negroes in Demerara on account of the seeds, which are occasionally supplied to the druggists in George Town as *Guinea grains*. The seeds are identical with the *Grains of Paradise* of English commerce.

AMOMUM VILLOSUM. (Loureiro.) *Hairy China cardamom.* (Guibourt.) Mountains of Cochin China.

Seeds aromatic and terebinthinate, but not powerful.

COSTUS. (Endl. Gen. Pl. (*Scitamineæ*) 225.)

COSTUS ARABICUS. (Linn.) East and West Indies.

Root, *Sweet costus*, aromatic, rather acrid, with the smell of *Orrice*, stomachic, tonic, discussive, becomes bitter by keeping. (G.) The *Putchuk root* of India, although of unknown origin, is usually referred to this plant; it is chiefly exported to China, where it is used as incense. (O'Sh.)

CURCUMA. (Endl. Gen. Pl. 223.)

CURCUMA AMADA. (Roxb.) Bengal.

Called by the Bengalees *Amada*, or *Mango ginger*, the fresh root possessing the peculiar smell of a fresh mango. (L.) It is a gentle stimulant, but now only used as an article for seasoning food. (O'Sh.)

CURCUMA ANGUSTIFOLIA. (Roxb.) East Indies.

Root nutritive, excellent for sick persons; ground to a flour yields by washing *East Indian arrowroot*. (G.) Tubers produce excellent *Arrowroot*, sold in the markets of Benares, and eaten by the natives. (L.) It is bought by the starch makers, and is therefore presumed to be employed in making starch. (Pereira.)

CURCUMA LEUCORHIZA. (Roxb.) "*Tikor*." East Indies.

Tubers produce excellent *Arrowroot*. (L.)

CURCUMA LONGA. (Linn.) *Curcuma*, κυπειρος ινδικος, (*Diosc.*) *Turmeric*. East Indies.

Roots, *Turmeric*, imported from the East Indies in tubers about the size of the little finger; aromatic, tonic, discussive, and heating; used especially in the jaundice and the itch; dose ʒ j. to ʒ ij.; dyes a deep yellow, and is used as a seasoning in Indian cookery. (G.) Bitter, aromatic, stimulant, tonic; employed in debilitated states of the stomach, intermittent fever, and dropsy. (Roxb.) Considered by the native practitioners of India an excellent application in powder for cleansing foul ulcers; also used in dyeing. (L.) Formerly much used in cookery to give things a colour; root tinges the urine a deep yellow colour. (Lou.) White paper dyed by an alcoholic tincture of Turmeric is a very sensitive test for alkalies. (O'Sh.)

CURCUMA RUBESCENS. (Roxb.) Bengal.

The pendulous tubers of this, and several other species of Curcuma, yield a very beautiful, clear, starch-like *Arrowroot*, which the natives of the countries where the plants grow, prepare and eat. In Travancore this flower or starch forms a large part of the diet of the inhabitants. (L.)

CURCUMA ZEDOARIA. (Roxb.) *Amomum zedoaria*, *Jedwar* or *Zadwar*. (Arab.) *Turmeric Zedoary*. Bengal, China.

Root, *Zedoaria longa*, *Z. flava*, *Zedoariæ radix*, fragrant, stimulant, stomachic; gr. x. to ʒ ss.; and used as a spice. The *Yellow zedoary* dyes a pale yellow. (G.) The *Zedoaria rotunda* of the shops. Employed in cardialgia, colic, cramp in the limbs, torpor of the intestinal canal, &c. The Hindoos use the roots as a perfume, as well as medicinally; aromatic, stomachic, carminative, similar in properties to ginger, but less efficient; M. Fée still refers the *Zedoaria rotunda* to *Kæmpferia rotunda*, notwithstanding the express declaration of Roxburgh, that the tubers of that plant possess little or nothing of the sensible properties of *Zedoary*. (L.)

CURCUMA ZERUMBET. (Roxb.) *Amomum zerumbet*, *Broad-leaved ginger*, *White zedoary*. (G.) East Indies.

The *Zedoaria longa* of the shops; vide *C. zedoaria*. (L.) Powdered and mixed with the powdered wood of *Cæsalpinia saphan* it is

copiously thrown about by the Hindoos during their holidays in March. (Lou.)

ELETTARIA. (Endl. Gen. Pl. 223.)

ELETTARIA CARDAMOMUM. (Maton.) *Alpinia cardamomum.* (Rosc.) *Amomum repens.* (Sonn.) *Alpinia repens.* (Smith.) *True cardamom.* Malabar.

Capsules, *Lesser cardamoms, Cardamomum minus.* Seeds *Cardamomi semina*, stimulant, drying, assisting digestion, emmenagogue. (G.) Seeds gratefully aromatic and pungent, with a flavour of camphor, and are esteemed more agreeable and useful in food and medicines than any others of this natural order. They are reckoned carminative and stomachic, and are employed very generally to give warmth to other medicines. According to Mr. White, they are one of the most valuable articles of modern luxury, regarded as a necessary of life by most of the inhabitants of Asia; a grateful and salubrious accessory of diet, &c. They enter into a considerable number of pharmaceutical compounds as adjuvants. (Pereira.)

ELETTARIA MAJOR. (Smith.) *Ceylon elettaria.* Ceylon.

Yields *Ceylon*, or *Wild cardamoms.* Their constituents, as well as their effects and uses, are doubtless analogous to those of the *Malabar cardamoms.* Their commercial value is about one-third that of the latter. (Pereira.)

EMBDLIA.

EMBDLIA SUPERSONATA.

Root used as a spice.

KÆMPFERIA. (Endl. Gen. Pl. 223.)

KÆMPFERIA GALANGA. (Linn.) *Alpinia sessilis.* (König.) India.

Roots have an agreeable, fragrant smell, and a somewhat warm, bitterish, aromatic taste; but they are unknown in London, although used medicinally by the Hindoos. (Roxb.) It does not produce the *Galanga major* of the druggists, and seems to have no other right to its specific name than what it derives from its supposed identity with the *Katsjula kalenga* of Rheede. Fée says, the roots are the *Radices alpiniæ spuriæ.* True *Galanga* is the produce of *Alpinia galanga*, which see. (L.)

KÆMPFERIA ROTUNDA. (Linn.) India.

Root, *Round zedoary, Zedoaria rotunda.* Fragrant, stimulating, stomachic; used as a spice. (G.) This was supposed to produce the *Zedoaries* of the druggists, and Fée continues to refer them to it. But it is clear that *Zedoary* is produced by *Curcuma zedoaria*, which see. (L.)

STISSERA.

STISSERA CURCUMA.

Root used as a spice. (G.)

ZINGIBER. (Endl. Gen. Pl. 223.)

ZINGIBER CASSAMUNAR. (Roxb.) East Indies.

Cassamunar root. (G.) Once in great repute as a medicine of un-

common efficacy in hysteric, epileptic, and paralytic disorders, but now out of use. (L.)

ZINGIBER OFFICINALE. (Rosc.) *Amomum zingiber, Ginger.*

This is the plant that produces *Ginger*, which is prepared from the Rhizoma; the young tender shoots of this plant are preserved in sugar, the older are scalded, scraped, dried, and become the *White ginger root* of the shops. If scalded without being scraped, it becomes *Black ginger*, one of the most valuable of aromatics, carminative, stimulant, sialogogue; used in flatulent colic, dyspepsia, gout, debility, and torpor of the system. (L.) Ginger yields a volatile oil, which is pale yellow, lighter than water; in taste very acrid and hot; also a resin, which is yellowish, soft, aromatic, and hot to the taste.

ZINGIBER ZERUMBET. (Rosc.) East Indies.

Rhizomata, with an agreeable smell, resembling that of ginger, and a hot, bitter, aromatic flavour, *(Radices zerumbethe offic.,)* not now used.

ORDER 144.—CANNACEÆ. (Endl. Gen. Pl. 225. (*Marantaceæ.*) Lindl. Nat. Syst. 324.)

Calyx superior, of three sepals, short; *corolla* tubular, irregular, with the segments in two whorls, the outer three parted, nearly equal; the inner very irregular, one of the lateral segments usually coloured, and formed differently from the rest; sometimes, by abortion, fewer than three; *stamens* three, petaloid, distinct, of which one of the laterals and the intermediate one are either barren or abortive, and the other lateral one fertile; *filament* petaloid, either entire, or two-lobed, one of the lobes bearing the anther on its edge; *anther* one-celled, opening longitudinally; *pollen* round; *ovary* three-celled, ovules solitary and erect, or numerous and attached to the axis of each cell; *style* petaloid or swollen; *stigma* either the mere denuded apex of the style, or hollow, cucullate, and incurved; *fruit* capsular, as in *Scitamineæ: seeds* round, without aril; *albumen* hard, somewhat floury; *embryo* straight, naked, its radicle lying against the hilum. *Herbaceous* tropical *plants*, destitute of aroma; *Rhizoma* creeping, abounding in nutritive fæcula; *stem* often branching; *leaves*, *inflorescence*, and *flowers*, as in Zingiberaceæ. (L.)

CANNA. (Endl. Gen. Pl. 227.)

CANNA EDULIS. (Ker.) *Achiras.* Peru.

The fleshy tubers are eaten in Peru as potatoes, and contain a large quantity of starch resembling arrowroot. (L.)

CANNA INDICA. (Rosc.) *Indian cane.* India.

Seeds, *Indian shot*, cordial, vulnerary. (G.) In the East Indies, the seeds of this and other species are sometimes used as shot. (Lou.)

The fæcula of another canna, called *C. coccinea*, has been advertised for sale, under the name of "*Tous les mois*," as an excellent sort of *Arrowroot*. (See Morning Chronicle, Aug. 4, 1837.) It is, however, very doubtful whether it is really produced by the *Canna coccinea* of botanists. (L.)

MARANTA. (Endl. Gen. Pl. 226.)

MARANTA ARUNDINACEA. (Linn.) *M. Indica.* (Tuss.) West Indies.

Root yields *Indian arrowroot. Maranta.* (G.) The tubers yield the *Arrowroot of commerce*, one of the lightest and most nutritious vegetable aliments; it was reckoned a powerful alexipharmic, and

derives its English name from its reputed property of counteracting the effects of poisoned arrows. (L.)

THALIA. (Endl. Gen. Pl. 226.)

Root used as a space.

ORDER 145.—MUSACEÆ. (Endl. Gen. Pl. 228. Lindl. Nat. Syst. 326.)

Flowers spathaceous; *perianth* six-parted, superior, petaloid, in two distinct rows, more or less irregular; *stamens* six, inserted upon the middle of the divisions, some often becoming abortive; *anthers* linear, turned inwards, two-celled, often having a membraneous petaloid crest; *ovary* inferior, three-celled, many-seeded; rarely three seeded; *style* simple; *stigma* usually three-lobed; *fruit* either a three-celled capsule, with a loculicidal dehiscence, or succulent and indehiscent; *seeds* sometimes surrounded by hairs, with an integument which is usually crustaceous; *embryo* in the axis of mealy albumen. *Stemless* or nearly *stemless plants: leaves* sheathing at the base, and forming a kind of spurious stem, often very large, their limb separated from the taper petiole by a round tumour, and having fine parallel veins diverging regularly from the midrib towards the margin.

HELICONIA. (Endl. Gen. Pl. 228.)

HELICONIA PSITTACORUM. West Indies.

Root eatable.

MUSA. (Endl. Gen. Pl. 228.)

MUSA PARADISAICA. (Willd.) *Musa, Plantain tree.* India.

Long says, this fruit and the *Banana* are among the greatest blessings bestowed by Providence upon the inhabitants of hot climates. Three dozen *Plantains* are sufficient to serve one man for a week instead of bread, and will support him much better. (Lou.)

MUSA SAPIENTUM. (Willd.) *Banana.* West Indies.

Fruits very nutritive; supposed to be the original and proper food of man, eaten either baked whole, or with milk and sugar, or sliced and stewed. (G.) The plants of this order are valuable, not only as food, but for the many domestic purposes to which the leaves, &c., are applied; some of them yield a most valuable flax, from which some of the finest muslins of India are prepared; the young shoots of the banana are eaten as a delicate vegetable. (L.)

ORDER 146.—IRIDEÆ. (De Cand. Bot. Gal. 451. Endl. Gen. Pl. 164.)

Perigone tubular at the base, adhering to the ovary, petaloid, six-cleft, or six-parted, often irregular; *stamens* three, inserted into the base of the outer segments of the perigone; *anthers* linear, dehiscing externally; *ovary* 1—3 celled, many-ovuled, the ovules in two rows; *style* one, or none; *stigmas* three, simple, or laciniated, membranaceous, or petaloid; *capsule* three-celled; three-valved, the valves septiferous in the middle, many-seeded; *seeds* attached to the inner angle of the cell; *embryo* within the fleshy or bony *albumen*. *Herbs* with tuberous *roots*, and often underground *stems* or *rhizomes; leaves* alternate, ensiform, or linear, equitant.

CROCUS. (De Cand. Bot. Gal. 453. Endl. Gen. Pl. 169.)

CROCUS ODORUS. Sicily.

Yields *Saffron* in Sicily, according to Gussone. (L.)

*Crocus sativus. (All.) (E. B. 343.) *Crocus, Saffron crocus.*
Fl. September. Perennial. Meadows in eastern countries.

Root has been proposed to be made into bread in times of scarcity; summits of the pistils dried, *Hay saffron, Crocus in fœno, Croci stigmata*, cordial, emmenagogue, anodyne, and exhilarant; dyes a fine yellow; used in cookery to colour rice, &c. *Cake saffron, Crocus in placenta*, formerly, and still, in some countries, esteemed the best, being now reduced with marygold flowers, and those of *Bastard saffron*, or *Safflower;* which is, perhaps, the true explanation of the very different effects ascribed to saffron by medical practitioners. (G.) The dried stigmata are the *Saffron* of the shops. In moderate doses this substance stimulates the stomach, and in large quantities excites the vascular system; moreover, it seems to have a specific influence on the cerebro-spinal system, as it affects, it is said, the mental faculties, a result which De Candolle considers analogous to that produced by the petals of certain odorous flowers. In modern practice it is but little used except as a colouring ingredient; on the Continent it is employed as an agreeable stimulant in many culinary preparations and liqueurs; in a medicinal point of view, it is frequently used to assist the eruption of exanthematous diseases, on the same principle, I fancy, that bird-fanciers give it to birds in the moult; it has been used as a carminative, antispasmodic, and emmenagogue. (Pereira.) The singular substance called *Polychroite* is obtained from saffron.

Gladiolus. (De Cand. 452. Endl. Gen. Pl. 168.)

**Gladiolus communis. (Linn.) *Corn flag.*
Fl. rose-coloured. June, July. Perennial. Native of the South of Europe.

Root has the same qualities as that of *Iris pseudacorus*, but is weaker. (G.)

Homeria.

Homeria collina. *Cape Tulip.* Cape of Good Hope.

A plant well known to almost every child in the colony. The poisonous properties of its bulbs were for a long time known to some extent, but from a circumstance of recent occurrence, in which two persons lost their lives and two others were recovered with difficulty, the virulence of its poison appears to be much greater than has been supposed. Obstinate constipation, with vomiting, were among the symptoms noticed in the case above mentioned.

Iris. (De Cand. Bot. Gal. 451. Endl. Gen. Pl. 166.)

*Iris fœtidissima. (Linn.) (E. B. 596.) *Gladwine, Roast-beef plant, Stinking gladwyn.*
Fl. dull livid purple. May, June. Perennial. South of England.
Juice of the root sternutatory, useful also in dropsy and scrofula. (G)

Iris Florentina. (Linn.) *Florentine orris.* South of Europe.

Fresh root a drastic hydragogue; when dried; sialogogue, errhine; used to give a violet scent to oils; cut into peas to keep open issues. (G.) The dried rhizoma is the *Orris root* of the shops, a subacid, aromatic, rather bitter substance, employed in the manufacture of

tooth-powder and hair-powder, and to keep up the discharge from issues. (L.)

**Iris Germanica. (Linn.) *Iris vulgaris, Common fleur-de-luce.*
Fl., outer segments purple, with a yellow beard, the inner ones light blue. June. Perennial. Native of the South of Europe.
Fresh root hydragogue, errhine; externally repels eruptions.

*Iris Pseudacorus. (Linn.) (E. B. 578.) *Acorus adulterinus, Gladiolus luteus.*
Fl. yellow. June, July. Perennial. Watery places.
Root a nauseous drastic purgative, but used in dropsies when other medicines fail; seeds roasted make coffee. (G.) The rhizoma is acrid, and possesses purgative and emetic qualities. (L.)

Iris tuberosa. (Linn.) The Levant.
Root incisive and purgative; considered by some as *hermodactyles*. (G.)

Iris versicolor. (Linn.) *Blue flag.* United States.
Root hydragogue, other properties the same as *I. tuberosa*. (G.) Rhizoma nauseous and acrid; it is an active cathartic, but is apt to produce a distressing nausea like sea-sickness, with a prostration of strength; most useful as a diuretic. (L. ex Bigelow.)

Order 147.—AMARYLLIDEÆ. (De Cand. Bot. Gal. 454. Endl. Gen. Pl. 174.)

Perigone monophyllous, tubular, adhering to the ovary, six-parted, æstivation imbricated, three outer segments of the same size as the inner ones; *stamens* six, filaments free or united; *anthers* introrse; *ovary* inferior, three-celled, cells many-seeded; *style* simple; *stigma* three-lobed; *capsule* three-valved, valves septiferous in the middle, many-seeded, or a berry, 1—3 seeded; *albumen* fleshy; *embryo* straight; *radicle* directed towards the umbilicus; *roots* bulbous, or fibrous; *flowers* umbellate, or solitary.

Alstrœmeria. (Endl. Gen. Pl. 180.)

Alstrœmeria edulis, (Tuss.) South America.
Furnishes tubers filled with a nutritious fœcula. (L.)

Alstrœmeria Ligtu. (Willd.) Peru.

Alstrœmeria Pelegrina. (Willd.) Peru.

Alstrœmeria revoluta.
Roots yield an esculent farina called *Liuta*.

Alstrœmeria Salsilla. (Linn.) South America.
Said to be diuretic and diaphoretic. (L.) Cultivated in Peru and the West Indies for its roots, which are used like the tubers of the potato. (Lou.)

Brunsvigia. (Endl. Gen. Pl. 176.)

Brunsvigia toxicaria. (Ker.) *Amaryllis disticha.* (Linn.) *Buphane toxicaria.* (Herb.) *Hæmanthus toxicarius.* (Hort. Kew.) Cape of Good Hope.
The viscid juice of the bulbs is a dangerous poison. It is one of

the ingredients used by the Bushmen to envenom their arrows, and is supposed to add most powerfully to the activity of the poison. (L.)

CRINUM. (Endl. Gen. Pl. 177.)

CRINUM ASIATICUM. (Roxb.) *C. toxicarium.* (Roxb.) East Indies.

The bulbs are powerfully emetic; they are used to produce violent vomiting in cases of poisoning by the *Antiaris.* (L.) In moderate doses it acts as a certain and mild emetic, without griping, purging, or any other distressing symptoms. Roots, when dried, emetic, but a double dose is required. (O'Sh.)

DORYANTHES. (Endl. Gen. Pl. 181.)

DORYANTHES EXCELSA. New South Wales.

The fibre is used for making ropes.

NARCISSUS. (De Cand. Bot. Gal. 454. Endl. Gen. Pl. 179.)

*NARCISSUS POETICUS. (Linn.) (E. B. 275.) *Narcissus.*

Fl. white, with a deep-reddish orange-coloured border to the nectary. May. Perennial. Norfolk and Kent.

Root emetic; used also as a dressing to burns. (G.) The bulbs have considerable energy as emetics; they are administered occasionally on the Continent in doses of 5—10 grains to produce nausea, and of 30 grains as an emetic; in the form of an extract, this and other species have been regarded almost as a specific, in cases of hooping-cough, in doses of two or three grains; but although the extract appears sometimes to act with surprising rapidity, effecting a cure in five or six days, yet it frequently fails, and is thought to be less efficacious than *Belladonna.* In doses of 2—3 drachms, the extract is a deadly poison. (L.)

*NARCISSUS PSEUDO-NARCISSUS. (Linn.) (E. B. 17.) *Daffodil.*

Fl. large, yellow. March, April. Perennial. Woods and meadows.

Properties the same as those of *N. poeticus.* (G. and L.) The flowers are said to be emetic. (L.)

NARCISSUS TAGGETTA. (Linn.) N. ODORUS. (Linn.;) and possibly many other species have probably similar properties. (L.)

OPORANTHUS. (Endl. Gen. Pl. (*Sternbergia.*) 175.)

OPORANTHUS LUTEUS. (Herb.) South of Europe.

Has purgative bulbs. (L.)

PANCRATIUM. (De Cand. Bot. Gal. 454. Endl. Gen. Pl. 179.)

PANCRATIUM MARITIMUM. (Linn.) South of Europe.

Reported to be emetic. (L.)

ORDER 148.—TACCACEÆ. (Endl. Gen. Pl. 159.)

Flowers hermaphrodite; *stamens* six, inserted at the base of the divisions of the limb; *filaments* petaloid, concave, or cucullate at the apex; *anthers* introrse, bilocular, free, erect or inflexed, dehiscing longitudinally; *ovary* adhering to the base of the tube of the corolla, one or imperfectly three-celled, having three parietal placentæ; *ovules* numerous, arranged on the placentæ in rows, placed either vertically or horizontally; *berry* unilocular or semitrilocular, many-seeded; *seeds* numerous, ovate, angulate, or lunate. *Scapigerous perennial herbs, roots* tuberous; *leaves* all radical, petiolate, the petioles half-sheathing at the base, either whole, palmate, or bepinnatifid, veiny; *inflorescence* umbellate.

Tacca. (Endl. Gen. Pl. 159.)

Tacca pinnatifida. (Forst.) Molucca Isles, and Islands of the Pacific Ocean.

The tuberose and fleshy roots, which are intensely bitter and acrid, contain a nutritious fecula, which, at Tahiti (Otaheite), is collected, and has been imported into England under the name of *Tahiti arrow-root*, or *Otaheite salep*. (Pereira.)

Order 149.—DIOSCOREÆ. (Endl. Gen. Pl. 157. Lindl. Nat. Syst. 357.)

Flowers diœcious; *calyx* and *corolla* confounded, superior. *Males: stamens* six, inserted into the base of the sepals and petals. *Females: ovary* three-celled, with one or two seeded cells; *style* deeply trifid; *stigmas* undivided; *fruit* leafy, compressed, with two of its cells sometimes abortive, occasionally succulent; *seeds* flat, compressed; *embryo* small, near the hilum, lying in a large cavity of cartilaginous albumen. *Twining shrubs: leaves*, alternate, occasionally opposite, with reticulated veins; *flowers* small, spiked, with from one to three bracts each. (Lindl.)

Dioscorea. (Endl. Gen. Pl. 158.)

Dioscorea alata. (Willd.) *Negro yam, White dry yam.* India.

Dioscorea bulbifera. (Willd.) *Ceylon white yam.* East Indies.

Dioscorea purpurea. *Purple yam.*

Dioscorea sativa. (Willd.) *Common yam.* West Indies.

Dioscorea triphylla. (Willd.) *Yam pee, Buck yam.* Malabar.

Roots very large, tuberous, farinaceous, esculent; and made also into *Sago*. (G.) The large, fleshy, mucilaginous, sweetish tubers, called yams, form an important article of food in all tropical countries. (Lou.)

Oncus. (Endl. Gen. Pl. 158.)

Oncus esculentus. *Oncorhiza esculenta.*

Root similar to that of *Dioscorea*, and has the same properties. (G.)

Tamus. (De Cand. Bot. Gal. (*Asparageæ*) 460. Endl. Gen. Pl. 158.)

*Tamus communis. (Linn.) (E. B. 91.) *Brionia nigra, Black bryony.*

Fl. greenish white. June. Perennial. Hedges and thickets.

Root diuretic, incisive, and opening, externally resolvent; young shoots eaten as asparagus. (G.) The tubers of the root are so acrid, that the pulp was formerly used as a stimulating plaster. The Moors eat the young shoots boiled with oil and salt. (Lou.)

Order 150.—SMILACEÆ. (Lindl. Nat. Syst. Endl. Gen. Pl. 152.)

Flowers hermaphrodite, or diœcious; *calyx* and *corolla* confounded, inferior, six-parted; *stamens* six, inserted into the perianth near the base, seldom hypogynous; *ovary* three-celled, the cells one or many seeded; *style* usually trifid; *stigmas* three; *fruit* a roundish berry; *albumen* between fleshy and cartilaginous; *embryo* usually distinct from the hilum. *Herbaceous plants*, or *under shrubs*, with a tendency to climb; *stems* woody; *leaves* reticulated.

SMILAX. (Endl. Gen. Pl. 155.)

SMILAX ASPERA. (Linn.) *Rough bindweed.* South of Europe, Barbary.

Indian sarsaparilla has been supposed to be produced by this plant, but there is no good authority to show that the rhizoma possesses active properties, neither does it grow in India. It is used in the south of Europe as a substitute for sarsaparilla. *Indian sarsaparilla* is produced by *Hemidesmus indicus*, an asclepiadaceous plant, which see.

SMILAX CHINA. (Linn.) *China, Tsinaw.* China.

Roots yield half their weight of a reddish *Sago;* imported from the East Indies. (G.) The rhizoma forms one of the *China roots* of the shops; it is recommended as a substitute for *Sarsaparilla;* the Chinese eat it under the idea that it invigorates them. (L.)

SMILAX GLABRA. (Roxb.) Sylhet.

Roxburgh says that the rhizoma is not to be distinguished by the eye from the medicinal drug brought from China; the natives of Sylhet use a decoction of the fresh root annually, for the cure of sores and of venereal complaints. (L.)

SMILAX GLAUCA. (Mart.) Brazil.

According to Martius, the woody, knotty root of this plant is called in Brazil *Raiz da China branca e rubra*, also *Japicànga*, or *Inhapécánga;* the Brazilians consider it a specific against syphilis, but besides this it is much recommended for gout and chronic cutaneous eruptions. In using this remedy it is taken for granted that the patient will submit to drink an enormous quantity. (L.)

SMILAX GLYCYPHYLLA. (Smith.) New Holland.

Fée says that the leaves of this have been introduced into practice under the name of *Sweet tea;* the infusion is sweet at first, and bitter afterwards; it is tonic and antiscorbutic. (G.)

SMILAX LANCEÆFOLIA. (Roxb.) Bengal.

The large tuberous rhizomata are much used by the natives of India, and are not to be distinguished from *China roots;* the juice of the fresh tuber is taken inwardly for the cure of rheumatic pains, and the refuse, after extracting the juice, is laid over the parts most painful. (L. ex Roxb.)

SMILAX MEDICA. (Schlecht.) Mexico.

This is undoubtedly the species that produces the Vera Cruz *Sarsaparilla;* Schiede, who found it on the eastern slope of the Mexican Andes, says it is carried from the villages of Papantla, Tuspan, Nantla, Misantla, &c., to Vera Cruz, under the name of *Zarzaparilla*, and is then introduced into the European market; he was told that the roots were gathered all the year long, dried in the sun, and then tied in bundles for sale. (L.) Vera Cruz Sarsaparilla is the produce of this species. (Pereira.)

SMILAX OFFICINALIS. (H. B. et Kunth.) South America.

This is called *Sarsaparilla* by the natives of the banks of the Magdalena, who, according to Humboldt and Bonpland, send great quanti-

ties to Carthagena and Mompox, whence it is shipped for Jamaica and Cadix. (L.) It is probably the source of *Jamaica*, and perhaps also of *Lima* and *Honduras sarsaparillas*. (Pereira.)

SMILAX PSEUDO CHINA. (Linn.) *Bastard China, Bastard ipecacuanha, Wild yam.* South of United States.

American china root is reported to belong to this plant, but it is very doubtful whether this ever comes into the drug market; several species seem to be mixed together by this name; Elliot says he believes this to be the one generally preferred in medicine as an alterative, and that it forms the basis of many diet drinks among the unlicensed faculty. From the tubers, with maize, sassafras, and molasses, the negroes of Carolina manufacture a very pleasant beer. (L.)

SMILAX PURHAMPUY. (Ruiz.) Peru.

The roots of this species are highly extolled by Ruiz, who calls it *China peruviana*, as one of the very best kinds of *Sarsaparilla*; Lindley asks, "Is not this the same as S. officinalis?" (L.)

SMILAX SARSAPARILLA. (Linn.) United States.

There is no good authority for this plant furnishing any of the sarsaparilla of commerce; nothing is known in the United States of its possessing any medicinal properties, and it is probable that the opinion of its being the source of the drug has originated in some mistake. (L.) There is no evidence that it yields any of the sarsaparilla of the shops, yet Martius ascribes the Vera Cruz variety to it. (Pereira.)

SMILAX SYPHILITICA. (Willd.) Tropical America.

In South America a kind of *Sarsaparilla* is produced by the roots of this, which is held in the highest estimation. (L.) This was considered by Dr. Pereira and others, to be the source of *Lisbon* or *Brazilian Sarsaparilla*, but that variety is now ascribed to *Smilax papyracea.*

SMILAX PAPYRACEA. (Poiret.) Brazil.

It appears from the researches of Martius and Griesbach, that the *Lisbon* or *Brazilian Sarsaparilla* is obtained from this species, which grows principally in the regions bordering on the river Amazon, and on the banks of most of its contributory streams.

ORDER 151.—LILIACEÆ. (De Cand. Bot. Gal. 461. Endl. Gen. Pl. 139.)

Flowers hermaphrodite; *perigone* petaloid, free, often tubular, six-cleft, or six-parted, the segments disposed in a double row; *stamens* six, opposite to the segments of the perigone, and generally adnate to them; *ovary* one, free, sessile, three-sided, with many ovules, the ovules arranged longitudinally in two rows; *style* one, longitudinally trisulcate, rarely wanting; *stigmas* three, or one, three-seeded; *capsule* three-celled, three-valved, the valves septiferous in the middle; *seeds* many, attached to the internal angle of the cell, and covered with a crustaceous, membraneous, or spongy integument; *embryo* within a cartilaginous or fleshy albumen; the *radicle* turned towards the hilum. *Herbs* either *bulbous* with radical *leaves*, or *caulescent*, with the *stem leaves* sheathing or sessile.

ALETRIS. (Lindl. Nat. Syst. 451. Endl. Gen. Pl. (*Hæmodoraceæ*) 172.)

ALETRIS FARINOSA. (Willd.) *Star grass, Blazing star, Mealy starwort.* United States.

One of the most intense bitters known. Used in infusion as a tonic and stomachic; large doses produce nausea, and tendency to vomit; has been employed in chronic rheumatism.

ALLIUM. (De Cand. Bot. Gal. 468. Endl. Gen. Pl. 146.)

*ALLIUM AMPELOPRASUM. (Linn.) (E. B. 1657.) *Scorodoprasum, Great round-headed garlick, Wild leek.*

Fl. purplish-white. August. Perennial. Holme's Island in the Severn. Rare.

Leaves partake of the properties of garlic and leeks. (G.)

*ALLIUM ARENARIUM. (Linn.) (E. B. 1358.) *Porrum vitigineum, Sand garlic, Vine leek.*

Fl. purple. July. Perennial. Mountainous woods and fields, on sandy soil, in the north of England.

Leaves more heating than leeks; diuretic and emmenagogue. (G.)

**ALLIUM ASCALONICUM. (Linn.) *Shallot.*

Fl. July. Perennial. Cultivated in kitchen gardens. Native of Asia.

Bulb used as a sauce.

**ALLIUM CEPA. (Linn.) *Cepa, Onion.*

Fl. light purple. July. Biennial. Egypt?

Bulb esculent; the juice, when fermented, forms vinegar, holding manna in solution. (G.) The onion is stimulant, diuretic, expectorant, and rubefacient; the juice is sometimes given, made into a syrup with sugar, in infantile catarrhs and croup, in the absence of much inflammatory action; it is also recommended in dropsy and calculous disorders; roasted and split, it is sometimes applied as an emollient poultice to suppurating tumours. (L.)

ALLIUM CONTORTUM. *Rocambole, Viper's garlic.*

Bulbous heads used in sauces, milder than garlic. (G.)

ALLIUM FISTULOSUM. (Willd.) *Welsh onion.* Siberia.

Bulbs and young leaves used in salads. (G.)

ALLIUM HIRSUTUM. *Moly of Dioscorides.* South of Europe.

Bulb in a pessary used in prolapsus of the womb. (G.)

ALLIUM MAGICUM. (Willd.) *Victorialis, Spotted ramsons.* Austria.

Bulbs heating, used also for an amulet, preserving against spectres and infected air, probably inspiring courage by their stimulant qualities. (G.)

ALLIUM NIGRUM. (Willd.) *Moly of Homer.* Barbary.

Properties and uses like those of A. hirsutum.

*ALLIUM OLERACEUM. (Linn.) (E. B. 488.) *Streaked field garlic, Wild garlic.*

Fl. greenish. July. Perennial. Borders of fields.

Bulb diuretic.

**Allium Porrum. (Linn.) *Porrum, Leek.*

Fl. white, or purple. July, August. Biennial. Native of Switzerland.

Bulb, expectorant, stimulant, and contains a little sulphur; juice a powerful diuretic, dissolving the calculi formed of the earthy phosphates. (G.)

**Allium sativum. (Linn.) *Allium, Garlic.*

Fl. whitish-purple. August. Perennial. Native of South of Europe.

Bulbs, esculent, strong-tasted, stimulating used in sauces. (G.) The bulbs act as a local irritant, and when taken into the stomach, as a stimulant, expectorant, and diuretic; they have been used in dropsies, and as an anthelmintic; steeped in rum, they form a favourite remedy among country people for the hooping-cough; the infusion is rubbed night and morning into the skin of the patient's loins; a clove of garlic, and a few drops of the juice introduced into the ear, are said to prove highly efficacious in atonic deafness. (L.)

**Allium schænoprasum. (Linn.) (E. B. 2441.) *The Chive.*

Fl. purplish. July. Perennial. Meadows and pastures.

Young leaves used as salads.

*Allium ursinum. (Linn.) (E. B. 122.) *Ramsons.*

Fl. white. June. Perennial. Moist woods and hedge banks.

Infused in brandy, used in gravelly complaints. (G.)

*Allium vineale. (Linn.) (E. B. 1974.) *Crow garlic.*

Fl. reddish, keels green. June. Perennial. Corn-fields and waste places.

Bulbs diuretic.

Aloe. (Endl. Gen. Pl. 143.)

Aloe arborescens. (Mill.) Cape of Good Hope.

Aloe Commelyni. (Willd.) Cape of Good Hope.

Aloe mitriformis. (Willd.) Cape of Good Hope.

Said to be collected for the preparation of Cape aloes. (L.)

Aloe indica. (Roxb.) East Indies.

Produces *Cape aloes*, and the coarse variety called the fœtid *Caballine*, or *Horse aloes.* (O'Sh.) Pereira supposes a part of the Indian aloes to be the produce of this plant.

Aloe purpurascens. (Haworth.) Cape of Good Hope.

Considered by some botanists as a variety of A. socotrina; stated by Theodore Martius to produce *Socotrine aloes.* (L.)

Aloe socotrina. (Lamb.) *A. perfoliata.* (Linn.) *A. vera.* (Mill.) Socotra.

Socotrine aloes, the best of all for medical purposes, are produced by the succulent leaves of this. The drug is imported from Smyrna and Bombay in skins, chests, and casks, is of a reddish-brown colour, glossy and pellucid, with a smooth conchoidal fracture. Its taste is very bitter, and the odour pleasant and aromatic. *Mocha aloes*, and genuine *Hepatic aloes*, are supposed to be varieties of the same species. (L.)

Aloe spicata. (Thunb.) Cape of Good Hope.

Said to yield *Socotrine* and *Cape aloes.* (G.) This is said to be the principal source of *Cape aloes*, a sort having a more strong and

disagreeable odour than *Barbadoes aloes*. *Horse aloes* are supposed to be produced from the same species, and to owe their difference to being obtained by boiling the leaves that have been previously used for producing a finer sample. (L.)

ALOE VULGARIS. (Lamb.) *A. barbadensis.* (Mill.) Ἀλοη. (*Diosc.*) East Indies.

This yields what are called *Barbadoes aloes*, or *Hepatic aloes*, by some writers, but not the true *Hepatic aloes*. It is imported in gourds from Jamaica and Barbadoes, is of a dark-brown or black, varying to reddish-brown, or liver colour, and has an unpleasant odour. (L.) The use of aloes has been advised in loss of appetite and dyspepsia, in habitual costiveness, to excite the menstrual discharge, to reproduce the hæmorrhoidal discharge, to promote the secretion of bile in certain cases, in cerebral affections, and as an anthelmintic; it is usually administered in the form of pill; the ordinary dose is five grains, but ten, fifteen, and even twenty grains, are sometimes given. (Pereira.) Its use is highly improper in stricture of the rectum, inflammatory states of the bowels, during pregnancy, and in persons liable to over profuse menstrual or hæmorrhoidal discharges. (O'Sh.)

ANTHERICUM. (Endl. Gen. Pl. 148.)

ANTHERICUM LILIASTRUM. (Willd.) *Phalangium, Spider wort.* Savoy.

Leaves, flowers, and seeds, used against bites of scorpions; bulbs similar to those of squills. (G.)

ASPARAGUS. (De Cand. Bot. Gal. (*Asparageæ*) 458. Endl. Gen. Pl. 151.)

*ASPARAGUS OFFICINALIS. (Linn.) (E. B. 339.) *Asparagus.* Fl. greenish-white. August. Perennial. South coast of England.

Diuretic; one of the five opening roots; young shoots eaten as a dainty, but produce in some bloody urine, and accelerate fits of the gout. (G.)

ASPARAGUS PETRÆA. *A. cutifolia, Corruda, Rock sparrow grass.* Root opening, diuretic, lithontriptic; roots nutritive. (G.)

ASPHODELUS. (De Cand. Bot. Gal. 463. Endl. Gen. Pl. 147.)

ASPHODELUS LUTEUS. (Linn.) *A. verus luteus, Hasta regia, King's spear.* Sicily.

ASPHODELUS RAMOSUS. (Willd.) *A. verus albus. White asphodel.* South of Europe.

Roots diuretic. (G.)

BULBINE. (De Cand. Bot. Gal. (*Phalangium*) 464.)

BULBINE PLANIFOLIA. (R. & S.) *Anthericum bicolor.* (Desf.) *Phalangium bicolor.* France.

Bulbs purgative, may be used for jalap. (G.) Has purgative roots, according to De Candolle. (L.)

CONVALLARIA. (De Cand. Bot. Gal. 459. Endl. Gen. Pl. (*Smilaceæ*) 154.)

*CONVALLARIA MAJALIS. (Linn.) (E. B. 1035.) *Convallium majalis, Lilium convallium, Lily of the valley.*

Fl. white, May. Perennial. Woods and coppices.

Flowers cephalic, in doses of ʒ j., or dried, and used as a sternutatory. (G.) An extract, prepared from the flowers, or from the roots, partakes of the bitterness, as well as of the purgative properties of aloes. A beautiful and durable green colour may be prepared from the leaves with lime. (Lou.)

*Convallaria Polygonatum. (Linn.) (E. B. 280.) *Polygonatum, Sigillum salomonis, Solomon's seal.*

Fl. greenish-white. May, June. Perennial. Woods in Kent, &c.

Rhizoma vulnerary, astringent, diuretic; used in a recent state as a cataplasm to take away the marks of bruises; berries, flowers, and leaves, acrid and poisonous. (G.)

Dracæna. (Endl. Gen. Pl. 151.)

Dracæna Draco. (Linn.) *Asparagus draco.* (Linn.) Canary Islands, East Indies.

Yields by incision the purest *Dragon's blood.* (G.) *Dragon's blood*, a tonic astringent resin, sometimes employed in diarrhœa and passive hæmorrhages, is yielded in part by this tree, from the surface of the leaves, and from the cracks in its trunk. (L.)

Dracæna ferrea. (Linn.) *D. terminalis.* (Jacq.) China.

Dracæna terminalis. (Blume.) *D. ferrea.* (Spreng.)

Roots used in diarrhœa. (G.) Are said to have astringent roots, found useful in dysentery. (L.)

Erythronium. (De Cand. Bot. Gal. 463. Endl. Gen. Pl. 139.)

Erythronium americanum. (H. K.) *E. lanceolatum.* United States.

Erythronium, P. U. S., root used for squills. (G.) The fresh root emetic in doses of twenty-five grains; leaves said to be more active than the root. (L.)

Erythronium dens canis. *Dens caninus, Dog's-tooth violet.* South of Europe.

Root eases the colic, and is used in epilepsy and tinea. (L.)

Herreria. (Endl. Gen. Pl. (*Smilaceæ*) 156.)

Herreria Salsaparilha. (Mart.) Brazil.

Employed in Brazil as *Sarsaparilla.* (L.)

Hyacinthus. (De Cand. Bot. Gal. 466. Endl. Gen. Pl. 144.)

*Hyacinthus non scriptus. (Linn.) (E. B. 162.) *Blue bell, Hare bell, Wild hyacinth.*

Fl. blue. May. Perennial. Woods, copses, and under hedges.

Root astringent, yields a gum. (G.)

Ledebouria. (Endl. Gen. Pl. (*Melanthaceæ*) 136.)

Ledebouria hyacinthoides. (Roth.) *Erythonium Indicum.* (Rott.) *East Indian squills.*

Bulb used for squills. (G.) According to Theodore Martius, the bulbs are used as a substitute for *Squills* in the East Indies. Ainslie states that they are employed in cases of strangury and fevers in horses. (L.)

LILIUM. (De Cand. Bot. Gal. 462. Endl. Gen. Pl. 141.)

LILIUM BULBIFERUM. (Linn.) *Hemerocallis, Orange lily, Red lily.* South of Europe.
Root cathartic; leaves cooling.

LILIUM CANDIDUM. (Linn.) *L. album, White lily.* Asia.
Bulb roasted is emollient and ripening; employed as an emollient cataplasm. (G.)

LILIUM MARTAGON. (Linn.) *Martagon, Turk's cap lily.* The Alps.
Root diuretic and emmenagogue. (G.)

MAYANTHEMUM. (De Cand. Bot. Gal. 459. Endl. Gen. Pl. (*Smilaceæ*) 154.)

MAYANTHEMUM BIFOLIUM. (D. C.) *Convallaria bifolia.* (Linn.) *Monophyllon, One blade.* South of France.
Flowers alexiterial. (G.)

METTRONICA. (Endl. Gen. Pl. 141.)

METTRONICA SUPERBA. *Gloriosa superba.* East Indies.
Root an active purgative. (G.) Has a root which is said to be a most violent poison. (L.)

MUSCARI. (De Cand. Bot. Gal. 466.)

MUSCARI AMBROSIACEUM. (Mönch.) *Bulbus vomitorius, Hyacinthus muscari.* (Linn.) *Musc grape flower.* South of France.
Root emetic; used in diseases of the bladder. (G.)

ORNITHOGALUM. (De Cand. Bot. Gal. 467. Endl. Gen. Pl. 146.)

*ORNITHOGALUM UMBELLATUM. (Linn.) (E. B. 130.) *Ornithogalon, Star of Bethlem.*
Fl. greenish, with a white margin. April, May. Perennial. Meadows, &c.
Root eaten raw and dressed; seeds used to season bread. (G.)

POLIANTHES. (De Cand. Bot. Gal. 472. Endl. Gen. Pl. 142.)

POLIANTHES TUBEROSA. (Linn.) *Tuberose.* South America.
Roots emetic; used also as a dressing to burns. (G.)

RUSCUS. (De Cand. Bot. Gal. (*Asparageæ*) 460. Endl. Gen. Pl. (*Smilaceæ*) 155.)

*RUSCUS ACULEATUS. (Linn.) (E. B. 560.) *Bruscus, Ruscus, Butcher's broom, Knee holly.*
Fl. very small, whitish, arising from the middle of the leaves. March, April. Perennial. South of England.
Roots and berries opening; seeds roasted for coffee. (G.)

RUSCUS HYPOGLOSSUM. (Linn.) *Hippoglossum, Bislingua, Horse-tongue.* Italy.

RUSCUS HYPOPHYLLUM. (Willd.) *Laurus alexandrina, Alexandrian bay.* Italy.
Roots cathartic. (G.)

SANSEVIERA. (Endl. Gen. Pl. 143.)

SANSEVIERA GUINEENSIS. (Willd.) *Aletris hyacinthoides.* (Mill.) *Aletris Guineensis.* (Jacq.) *Aloe Guineensis.* (Jacq.) *Acyntha Guineensis.* (Medic.) *African hemp, Blaw.* Africa.

Was probably known in England from an early date, as it is said to have been reared without difficulty in the gardens of Hampton Court in 1690, and known under the name of African bowstring hemp, a name derived from the uses to which it was at that time applied by the natives. The exsiccated fibres are used by the natives of the present day, for the manufacture of fishing lines, nets, threads, and other kinds of cordage, and they consider them to resist the action of salt water better than those, similarly prepared, from any other vegetable substance.

SANSEVIERA PUMILA.

Properties similar to the preceding.

SANSEVIERA ZEYLANICA. India.

A plant which is abundant in the southern parts of the continent of India, and yields bowstring hemp; *Marool*, or *Moorva*.

SQUILLA. } (De Cand. Bot. Gal. 464. Endl. Gen. Pl. 146.)
SCILLA. }

SQUILLA INDICA. (Roxb.) India.

The taste of the bulb is fully as nauseous and bitter as that of S. maritima; it is doubtful, however, whether this plant is really of this genus. (L.)

SQUILLA LILIO HYACINTHUS. (Linn.) South of France.

Bulb used as a purgative. (G.)

SQUILLA MARITIMA. (Stein.) *Scilla maritima.* (Linn.) *Ornithogalum maritimum.* (Lamb.) *Stellaris Scilla.* (Mönch.) *Scilla, Squill.* Σκιλλα (*Dioscorides.*) South of Europe.

Bulb, acrid, bitter, nauseous and emetic, powerfully incisive, diuretic, and expectorant; dose of the fresh bulb, gr. v. to gr. xv., of the dried, gr. j. to gr. iij. twice a-day. (G.) The bulbs contain an active principle called *Scillitin*, and have been officinal from a very remote period. They are very acrid, and capable of vesicating. Squills are used medicinally as an emetic medicine in hooping-cough and croup, as a diuretic in dropsies, and in chronic pulmonary affections, such as chronic catarrh, humid asthma, winter cough, &c.; they are also employed as an expectorant. In commerce there are two sorts, the red and the white, which appear to be mere varieties, differing in the colour of the bulbs; the dry external scales of the bulb, and the young and tender interior ones, are inert, or nearly so, and should be rejected; the intermediate scales are, for obvious physiological reasons, the part in which the energy of the plant principally resides. (L.)

SQUILLA PANCRATION (Stein.) Παγκρατιον. (*Dioscor.*) South of Europe.

Believed by M. Steinheil to be the true *Pancration* of Dioscorides. which, according to that author, was very like squills in its effects, but milder. (L.)

TULIPA. (De Cand. Bot. Gal. 461. Endl. Gen. Pl. 139.)

TULIPA GESSNERIANA. *Tulipa, Tulip.* The Levant.

Bulb nutritive.

XANTHORRHŒA. (Endl. Gen. Pl. 152.)

XANTHORRHŒA ARBOREA (Brown.) New Holland.

A red resin, called *Black-boy resin*, is probably obtained from this tree. (Pereira.)

XANTHORRHŒA HASTILIS. (Brown.) New Holland.

XANTHORRHŒA RESINOSA. (Pers.) *Acaroides resinifera.* (Spreng.) *Grass tree.* New Holland.

Yield *Yellow resin.* (G.) Commonly called *Botany Bay* or *New Holland gum.* It has been used in the form of tincture, with opium, in fluxus hepaticus and diarrhœa. (Pereira.)

YUCCA. (Endl. Gen. Pl. 144.)

YUCCA GLORIOSA. (Willd.) *Yucca, Indian bread plant. Adam's needle.* America.

Root yields *Cassava*, or *Indian bread.*

ORDER 152.—BROMELIACEÆ. (De Cand. Bot. Gal. 472. Endl. Gen. Pl. 181.)

Perigone tubular, either adhering to the ovary, or free, six-cleft, or six-parted, the segments disposed in a double row, the three external ones short, persistent, caliciform; the three internal ones larger, generally caducous, petaloid; *stamens* six, inserted beneath the perigone; *ovary* three-celled, many-ovuled; *style* simple; *stigma* three-lobed; *fruit* capsular or succulent, three-celled, many-seeded; *embryo* elongated, recurved, lying in the base of mealy albumen. *Stemless* or *short-stemmed plants*, their stems sometimes composed of fibrous *roots*, consolidated round a slender centre; *fruit* sometimes eatable.

AGAVE. (De Cand. Bot. Gal. 442. Endl. Gen. Pl. (*Amaryllideæ*) 181.)

AGAVE AMERICANA. (Linn.) South America.

Sap of the leaves saccharine; used as honey, and to make a wine, *Pulque.* (G.) According to Long, the leaves are used as a substitute for soap. For this purpose, after being cut, they are passed between the rollers of a mill with their points foremost, and the juice being conducted into wide shallow receivers, through a coarse cloth or strainer, is exposed to a hot sun until the aqueous part being exhaled, it is reduced to a thick consistence. It may then be made up into balls with the help of ley ashes; it will lather with salt water as well as fresh. The leaves are also used for scouring pewter, and other kitchen utensils, and floors. The fibres of the leaves, separated by bruising and steeping in water, make a strong thread for common uses. (Lou.) The sap readily ferments, and forms an alcoholic liquor, which is powerfully intoxicating, and is a favourite beverage of the Spaniards in Mexico. Its smell is said to resemble that of putrid meat. (O'Sh.)

AGAVE VIVIPARA. (Willd.) *Curatoe.* South America.

Juice of the leaf, mixed with lime-juice and treacle, a good dressing for ulcers. The inspissated juice used as a plaster in gout; root chewed in diarrhœa. (G.)

BROMELIA. (Endl. Gen. Pl. 182.)

BROMELIA ANANAS. (Willd.) *Ananas, Pine apple.* South America.
Fruit highly odoriferous, esculent, astringent. (G.) Ropes are made in Brazil from a species of bromelia called *Grawatha.*

PITCAIRNIA. (Endl. Gen. Pl. 183.)

PITCAIRNIA CRYSTALLINA. (Pers.) *Pourretia lanuginosa.* (Ruiz et Pav.)
Exudes a crystalline gum from every part.

POURRETIA. (Endl. Gen. Pl. 184.)

POURRETIA LANUGINOSA. (Ruiz et Pav.)
Exudes a crystalline gum from every part. (G.)

TILLANDSIA.

TILLANDSIA USNEOIDES. (Willd.) West Indies.
Used in hæmorrhoids. (G.)

ORDER 153.—COLCHICACEÆ. (De Cand. Bot. Gal. 473. (*Melanthaceæ.*) Lindl. Nat. Syst. 347 ; and Endl. Gen. Pl. 133.)

Flowers generally hermaphrodite ; *perigone* coloured, six-cleft, or six-parted, the segments generally involute in æstivation ; *stamens* six, adnate to the segments of the perigone ; *anthers* extrorse : *ovaries* three, sometimes scarcely adherent, sometimes more or less united, and constituting a single three-celled ovary ; the cells containing numerous seeds, attached to the inner angle, and terminated by a long or short style ; *stigma* glandular ; *fruit* generally three-valved, and three-celled, separating and dehiscing by their inner angle ; *seeds* many, affixed to the inner margin of the valves ; *embryo* in a fleshy albumen. *Herbs* of various habits.

Almost all the plants of this order are so active as to be really poisonous.

ASAGRÆA. (Lindl.)

ASAGRÆA OFFICINALIS. (Lindl.) *Helonias officinalis.* (Don.) *Veratrum officinale.* (Schlecht.) *Spike-flowered asagræa.* Mexico, South America.
Seeds, *Cebadilla, Cevadilla,* or *Sabadilla,* have been used as an anthelmintic for thread and tape-worms, and as a source from which to obtain *veratria.* Effects similar to those of *Veratrum album,* and has been employed in similar cases.

COLCHICUM. (De Cand. Bot. Gal. 473. Endl. Gen. Pl. 137.)

*COLCHICUM AUTUMNALE. (Linn.) (E. B. 1432.) *Colchicum, Meadow saffron.*
Fl. lilac. September, October. Perennial. Meadow and pastures.
The cormus, *Colchici cormus,* taken up towards the end of July, sliced transversely immediately to prevent its growth, and dried without heat, is a very powerful sedative, cathartic, diuretic, and expectorant, but is inert in the autumn, or when dried by heat ; dose of the bulb, gr. ss. to gr. iij., made into a pill ; seed, *Colchici semina,* milder than the root. The Dublin College indicates the bulb (*cormus*) as the part used in medicine. The active properties of Colchicum are supposed to depend on an alkaline principle called *Colchicina.* (G.) The dried cormi and

seeds are used extensively in various pharmaceutical preparations. *Colchicum* is found to increase the secretions of the intestinal mucous membrane, and of the kidneys, and in some cases to act as a sudorific; it is also emetic and purgative, and in large doses is a powerful narcotico-acrid poison; it is used externally in dropsy, gout, rheumatism, and also as an anthelmintic. The energy of the cormus, and consequently of the preparations from it, is often much impaired by the collection of the plant at a wrong time of the year, or by keeping it after it has been collected until the flowers sprout forth, which they will do quickly if taken into a warm place; when the leaves are quite withered is the best time for taking up the cormi, of which use should be made without loss of time; many of those sent to the drug shops for sale have already pushed forth their flowers, which are broken off so as to prevent the circumstance from being observed; I have seen many cwts. sent to town in this state, which nevertheless found a ready sale, and at the best price. (Lind.) Colchicum has been employed in gout, rheumatism, dropsy, inflammatory diseases generally, fevers, as an anthelmintic for expelling the tape-worm, chorea, hypochondriasis, hysteria, humoral asthma, and other chronic bronchial affections. It has been administered in substance, in a liquid, and as an extract. (Pereira.)

COLCHICUM VARIEGATUM. (Linn.) *Chequer-flower.* Greece.
Has been supposed to yield *Hermodactyls.*

COLCHICUM MONTANUM. (Linn.) *C bulbocodiodes, Mountain colchicum.* South of Europe, Arabia.
It is not improbable that this may yield *Hermodactyl*, which Dale tells us is brought from Syria. (Pereira.)

GYROMIA. (Endl. Gen. Pl. (*Smilaceæ*) 154.)

GYROMIA VIRGINICA. (Nutt.) *Medeola virginiana.* (Linn.) *Indian cucumber.* United States.
Root diuretic. (G.) The rhizoma is diuretic, and has some reputation as a hydragogue, but it is not supposed to possess much energy. (L.)

HELONIAS. (Endl. Gen. Pl. 135.)

HELONIAS DIOICA. (Pursh.) *H. lutea.* (H. K.) *H. pumila.* (Jacq.) *Melanthium dioicum.* (Walt.) *M. densum.* (Lamb.) *Veratrum luteum.* (Linn.) *Devil's bit, Unicorn's horn.* United States.
The root in infusion is anthelmintic; in tincture bitter and tonic. (L. ex De Cand.)

HELONIAS ERYTHROSPERMA. (Michx.) *H. læta.* (Bot. Mag.) *Melanthium lætum.* (Ait. Kew.) *Anthericum subtrigynium.* United States.
This plant is a narcotic poison, and used in the southern part of the United States for destroying flies. (L.)

HELONIAS FRIGIDA. *Melanthium phalangioides.* (Lamb.) *M. muscætoxicum.* (Walt.) *Anthericum subtrigynim.* (Jacq.) *Veratrum frigidum.* (Schlecht.) Mexico.
A poisonous plant called *Savoeja* by the Mexicans; horses that eat it become stupified. (L.)

HELONIAS OFFICINALIS. (Don.) *Veratrum officinale.* (Schlecht.) Mexico.

This was ascertained by Messrs. Schiede and Deppe to produce at least part of the *Sabadilla seeds* of the shops, the use of which has now become so general for the manufacture of *Veratria.* Its seeds are the officinal part, and are used as those of *Veratrum sabadilla.* (L.)

PARIS. (Lindl. Nat. Syst. 348. De Cand. Bot. Gal. (*Asparageæ*) 459. Endl. Gen. Pl. (*Smilaceæ*) 154.)

*PARIS QUADRIFOLIA. (Linn.) (E. B. 7.) *Herba paris, Herb paris, One berry, True love.*

Fl. greenish, the inner segments yellowish. May, June. Perennial. Moist and wet shady woods.

Alexiterial, recommended by Boerhaave in maniacal cases; dose ʒ j. a-day; leaves and berries narcotic; root emetic; dose ℈ ij.

TRILLIUM. (Endl. Gen. Pl. (*Smilaceæ*) 153.)

TRILLIUM CERNUUM. (Willd.) North America.

Root violently emetic; berry nauseous and poisonous. (G.)

TRILLIUM ERECTUM. (Linn.) *T. fœtidum.* (Par.) *T. rhomboideum.* (Michx.) United States.

Rhizoma violently emetic, and the fruit suspicious; other species are reported to have the same properties. (L.)

VERATRUM. (De Cand. Bot. Gal. 473. Endl. Gen. Pl. 135.)

VERATRUM ALBUM. (Linn.) *Elleborus albus, Veratrum, White hellebore.* South of Europe.

Rhizoma, a drastic emetic, in doses of gr. ss. to gr. iij., for horses ʒ ss. to ʒ j., in farcy; also used as a sternutatory, and in itch ointments; juice used to poison weapons for war or hunting. (G.) The rhizoma is very poisonous, acting as a local irritant; applied to the nose, it produces violent sneezing; swallowed in small doses, as one or two grains, it is said to act as an emetic and purgative; in large quantities it causes violent vomiting, purging, and other consequences that produce death. It is rarely employed internally, except in cases of mania and epilepsy, lepra, torpid conditions of the large intestines, gout, &c. In the form of powder, it is sometimes presented as a sternutatory in amaurosis and affections of the brain. The *Unguentum veratri* is used against the itch, and the decoction not only in skin diseases, but also to destroy pediculi. (L.)

VERATRUM SABADILLA. (Retz.) *Cevadilla, Indian caustic barley.* Mexico and West Indian Islands.

Capsules and grains caustic; powder used by monks to kill fleas and lice. (G.) This furnishes one of the *Ceradilla, Cebadilla,* or *Sabadilla seeds* of commerce, which were formerly used to destroy pediculi, and as anthelmintics; they have also been employed in chronic rheumatism, and paralysis, and in neuralgic cases; they are now chiefly consumed in the manufacture of *Veratria,* to which they give the name. This substance is an active and dangerous local stimulant, but administered with caution, it proves a valuable medicine in gout, rheumatism, anasarca, and generally as a substitute for *Colchicum.*

(L.) The fruit and seeds of V. sabadilla are said to be brought from the Antilles, under the name of *Cebadilla* (Semina Sabadillæ Caribææ), but I have never met with them. (Pereira.)

VERATRUM VIRIDE (Ait. Hort.) *Helonis viridis.* (Bot. Mag.) *American hellebore.* United States.

Root emetic. (G.) The roots are acrid, emetic, and powerful stimulants, followed by sedative effects. In all respects it closely resembles *Veratrum album* in its properties. (L.) It is used in the United States as a substitute for V. album. (Pereira.)

ORDER 154.—PALMÆ. (De Cand. Bot. Gal. 480. Endl. Gen. Pl. 244.)

Perigone six-parted, persistent; *stamens* generally six, inserted beneath the scales of the perigone; *ovary* one, superior; *style* one or three; *fruit* baccate, or drupaceous, 1—3 celled, 1—3 seeded; *seeds* osseous; *embryo* minute, lodged in a large cavity of the albumen; *stem* shrubby; *leaves* petiolated, sheathing at the base; *spadix* terminal, often branched, enclosed in a one or many valved spatha; *flowers* small, with bractlets; *fruit* occasionally very large.

Many of these trees by tapping yield a juice called *Toddy*, which, when drank fresh, in the cool of the morning, is a mild aperient; when the day gets warm, it begins to ferment, and is converted into wine, and lastly vinegar, unless boiled down for a coarse brown sugar called *Jaggery.* The pith of the trunk of many palms yields by washing a fecula, *Sago;* and the kernels of their nuts yield by expression a butter-like oil.

ARECA. (Endl. Gen. Pl. 247.)

ARECA CATECHU. (Linn.) *A. faufel Areca, Faufel, Betel-nut tree.* East Indies.

Husk of the fruit, *Pinang*, chewed with betel and a little lime as a sialagogue and stomachic, reddens the spittle; *Catechu* is extracted from the wood. (G.) The well-known *Betel-nut* is the fruit of this plant, and is remarkable for its narcotic or intoxicating powers; from the same fruit is prepared a kind of spurious *Catechu.* (L.) This plant produces a nut, which is cut into slices, wrapped in the aromatic leaves of the betel pepper, and chewed as we do tobacco. These leaves are previously covered with a thin layer of shell lime, to preserve the flavour longer in the mouth; in most parts of the East Indies the natives are continually chewing it, swallowing their saliva tinctured with the juice, and spitting out the rest; the inside of their mouths appears as red as blood, and it gives their teeth a dark colour, but it preserves the teeth, sweetens the breath, and is a stomachic and diuretic. (Lou.) Two kinds of Catechu—one called *Kassu*, which is black and mixed with paddy husks; the other termed *Coury*, which is yellowish-brown—are obtained from Areca-nuts, *Kassu* is the *Colombo* or *Ceylon Catechu*, or *Cutch.* (Pereira.)

ARECA GLOBULIFERA.

Properties similar to the last.

ARECA OLERACEA. (Willd.) *Cabbage palm.* West Indies.

Flowering bud, or cabbage, is highly esteemed, yields an oil. (G.)

The green top is cut off, and the white heart of two or three inches in diameter, consisting of the leaves closely folded together, taken out, and eaten, either raw with pepper and salt, or fried with butter like the artichoke. (Lou.)

ARENGA. (Endl. Gen. Pl. 248.)

ARENGA SACCHARIFERA. (Labill.) *Borassus gomutus, Saguerus rumphii, Sugar palm.* East Indies.

Yields *Sago* and excellent *Toddy*. (G.) Said by Dr. Hamilton to produce one of the finest kinds of *Sago*. (L.)

BACTRIS. (Endl. Gen. Pl. 254.)

BACTRIS MINOR. (Willd.) *B. rotunda, Cocos guinensis, Prickly pole.* South America.

Fruit oily. (G.) Produces a fruit containing an acid juice, of which the Americans make a sort of wine. Canes called by the French *Cannes de Tobago*, are made of the stem. (Lou.)

BORASSUS. (Endl. Gen. Pl. 250.)

BORASSUS FLABELLIFORMIS. (Willd.) *Lontarus domestica, Palmyra tree.* East Indies.

Yields *Toddy* and also *Bdellium*. (G.) A wine and sugar are made from the sap of the trunk. (Lou.)

CALAMUS. (Endl. Gen. Pl. 249.)

CALAMUS DRACO. (Willd.) Indian Archipelago.

Fruit yields *Dragon's blood*. (G.) One of the resinous astringent substances called *Dragon's blood* is obtained from this. (L.) *Dragon's blood, in drops*, (*Sanguis draconis in lachrymis*,) is obtained, according to Rumphius, by rubbing or shaking the fruit of *C. draco* in a bag. (Pereira.)

CARYOTA. (Endl. Gen. Pl. 248.)

CARYOTA URENS. (Linn.) *Saguaster major.* East Indies.

Yields *Toddy* and *Sago;* juice of the root used to poison wells; kernel made into a sweetmeat. (G.) The cellular part of the trunk yields *Sago* of the finest quality, according to Roxburgh; *Palm wine* is also obtained from the trunk in great abundance. (L.) In Ceylon this plant yields a sort of liquor, sweet, wholesome, and no stronger than water. It is taken from the tree twice or thrice a day, and an ordinary tree will yield three or four gallons. They boil this liquor, and thus make a kind of sugar of it called *Jaggery*. (Lou.)

CEROXYLON. (Lindl. Nat. Syst. 346. Endl. Gen. Pl. (*Iriarteæ*) 248.)

CEROXYLON ANDICOLA. (Humb.) *Wax palm.* South America.

Trunk covered two inches thick with wax and resin. (G.) Has its trunk covered by a coating of wax, which exudes from the spaces between the insertion of the leaves. It is, according to Vauquelin, a concrete inflammable substance, consisting of one-third wax and two-thirds resin. (L.) Melted with a little suet, this wax makes excellent tapers. (O'Sh.)

CHAMÆROPS. (Endl. Gen. Pl. 253. De Cand. Bot. Gal. 480.)

CHAMÆROPS HUMILIS. (Linn.) *Chamæriphes, Palma prunifera, Phœnix humilis.* South of Europe.

Said to yield *Bdellium;* fruit *Wild dates*, astringent. (G.) Yields wax.

Cocos. (Endl. Gen. Pl. 256.)

Cocos butyracea. (Linn.) *Elais butyracea.* (Kunth.) Brazil. Fruit yields a solid oil. (G.)

Cocos fusiformis. (Willd.) *C. aculeatus*, *Ebenus Æthiopica*, *Black ebony tree*, *Great macaw tree.* Jamaica.

Yields *Macaw fat.* (G.)

Cocos lapidea. (Gaert.) *Attalea funifera.* (Mart.) *Lithocarpus cocciformis.* (Targ. Tor.) Brazil.

The shell of the nut, *Coquilla nut*, which is about the size of a swan's egg, and very thick and hard, is used by the turner for making a variety of small ornaments. It is of a brown colour, prettily marked, and takes a good polish. The dilated base of the leaf-stalks separates into a long coarse fringe, which is used in this country under the name of *Piacaba*, for making brooms, &c.

Cocos nucifera. (Linn.) *Palma cocos*, *Cocoa tree.* East Indies.

Yields the best *Toddy;* fruit bud, *Cabbage*, used for food; nuts, *Cocoa nuts*, contain a milky juice, very refreshing; flesh, strong tasted, very nutritive, fattening; used in stews; rubbed down with water, used as a milk; yield an oil by boiling or expression. Confounded with *Cacao nut.* (G.) The root is sometimes masticated instead of the areca nut; of the small fibres baskets are made in Brazil. The hard case of the stem is converted into drums, and used in the construction of huts. The reticulated substance at the base of the leaf is formed into cradles, and some say into a coarse kind of cloth; the unexpanded terminal bud is a delicate article of food. The leaves furnish thatch for dwellings, and materials for fences, buckets, and baskets. They are used for writing on, and make excellent torches; potash in abundance is yielded by their ashes; the midrib of the leaf serves for oars; the juice of the flower and stems is replete with sugar, and is fermented into excellent wine, or distilled into a sort of spirit called *Arrack;* or the sugar itself is separated under the name of *Juggery;* the fruit is valuable for food, and contains a delicious beverage; the fibrous and uneatable rind is not less useful; it is not only used to polish furniture, and to scour the floors of rooms, but is manufactured into a kind of cordage, called *Coir rope*, which is nearly equal in strength to hemp, and which Roxburgh designates as the very best of all materials for cables, on account of its great elasticity and strength. Finally, an excellent oil is obtained by expression; the juice of this, as well as of other species of palms, is known in India by the name of *Toddy;* it is a grateful beverage, and is found to be the simplest and easiest remedy that can be employed in removing constipation in persons of delicate habit, especially European females. (L.)

Corypha. (Endl. Gen. Pl. 252.)

Corypha cerifera. (Linn.) *Copernicia cerifera.* (Mart.) *Carnauba palm.* Brazil.

A slow-growing palm-tree, the leaves of which are covered with

wax, (*Carnauba wax*,) which differs from that of the Ceroxylon in being unmixed with resin.

ELAIS. (Endl. Gen. Pl. 255.)

ELAIS GUINEENSIS. (Jacq.) *Palma oleosa*, *Guinea palm*, *Oil palm*. Guinea.

Yields *Palm oil*. (G.) Also said to yield the best kind of *Palm wine*. (L.)

ELATE. (Lindl. Nat. Syst. 346.)

ELATE SYLVESTRIS. (Willd.) *Wild date tree*. East Indies.

Yields a pleasant *Toddy*. (G.)

HYPHÆNE. (Endl. Gen. Pl. 251.)

HYPHÆNE THEBAICA. (Gaertn.) *Douma thebaica*. (Poir). *Cucifera thebaica*. (Delile.) *Doum Palm*, *Gingerbread tree*. Egypt.

The fruit, which is about the size of an orange, is eatable, but insipid, and has the flavour of stale bread. It forms a part of the nourishment of the Arabs, who remove the outer envelope which is red, and eat the spongy substance contained in the nut. Infused in water with dates, it is used as a cooling drink in fevers.

LODOICEA. (Endl. Gen. Pl. 251.)

LODOICEA MALDIVICA. *L. sechellarum*. (Labill.) *Borassus sechellensis*, *Maldivian cocoa-nut tree*. *Cul de Négresse*. East Indies.

Fruit, *Sea cocoa-nut*, but indifferent eating; used in typhus fevers. (G.)

PHŒNIX. (Endl. Gen. Pl. 253.)

PHŒNIX DACTYLIFERA. (Linn.) *Palma*, *Date tree*. Levant.

Fruit, *Dates*, *Dactylus*, saccharine, fleshy, emollient, slightly astringent, and pectoral. (G.) The fruit of this tree makes a great part of the diet of the inhabitants of Arabia and part of Persia; in Upper Egypt, many families subsist almost entirely upon it; they make a conserve of it with sugar, and even grind the hard stones in their hand-mills for their camels; the date is said to strengthen the stomach and the intestines, to stop looseness, and promote expectoration, for which purpose it is given in pectoral decoctions; it is also recommended in the piles, given in red wine; juice distilled forms a kind of *Arrack*. (Lou.) A single tree often affords in Arabia from 100 to 200 lbs. of fruit. (O'Sh.)

SAGUS. (Endl. Gen. Pl. 250.)

SAGUS FARINIFERA. (Gaertn.) East Indies.

Yields an indifferent kind of *Sago*. (L.)

SAGUS LÆVIS. (Jack.) Sumatra and Molucca.

Some of the finest *Sago* of Malacca is prepared from the soft cellular substance of the trunk before the fructification appears; it forms the principal part of the food of the natives of the Poggy Islands near Sumatra. (L.)

SAGUS VINIFERA. (Pers.) *S. genuina*, *S. palma pinus*, *Sagou*, *Sego*, *Sago palm*. Guinea.

Yields the best *Sago*. (G.) *Sagus Rumphii*, and *Saguerus Rumphii*, (Roxb.,) are also employed in the manufacture of *Sago*.

Order 155.—AROIDEÆ. (De Cand. Bot. Gal. 480. Endl. Gen. Pl. 232.)

Flowers monœcious, sessile, arranged upon a simple spadix, generally surrounded by a monophyllous spathe, or by a few scales, sometimes naked; *perigone* none. *Male flower: stamens* definite, or indefinite; *anthers* 1—2 celled. *Female flower: ovaries* either mixed with the stamens or separate, one-celled, rarely three-celled, many-seeded; *styles* and *stigmas* as many; *fruit* baccate, round, or rarely capsular, one-seeded by abortion; *embryo* straight, in the middle of a fleshy or farinaceous albumen; *radicle* inferior. *Herbs* with or without a stem; the *leaves* alternate, radical, or sheathing at the base, sometimes pedate, or cordate.

Acorus. (De Cand. Bot. Gal. 481. Endl. Gen. Pl. 241.)

*Acorus Calamus. (Linn.) (E. B. 356.) *Sweet flag*, or *Sedge*. Fl, June. Perennial. Watery places and banks of rivers.

The rhizoma contains an aromatic bitter principle, which has caused the plant to be regarded as medicinal: in cases of chronic catarrh and humid asthma benefit has been received from its exhibition. In Constantinople, the rhizoma is made into a confection, which is considered a good stomachic, and is eaten freely during the prevalence of epidemic diseases. It is in this country chiefly employed by perfumers in the manufacture of hair powder, on account of the fragrance of the essential oil which is mixed with its farinaceous substance. Dr. Pereira says, that, although it is rarely employed in medicine, it might frequently be substituted for other more costly aromatics. It is adapted to cases of dyspepsia, or as an adjunct to tonics or to purgatives. (L.)

Arisæma. (Endl. Gen. Pl. 234.)

Arisæma atrorubens. (Blume.) *Arum atrorubens*. (H. K.) *A. ringens*, *A. tryphyllum*. (Linn.) *Dragon root*, *Indian turnip*. North America.

Arum, *P. U. S.*, root, boiled in milk, used in phthisis. (G.) Violently acrid and almost caustic; the rhizoma when fresh is too powerful to render its internal exhibition safe; the acrid property extremely volatile, easily driven off by heat, when the rhizoma yields one-fourth of pure delicate amylaceous matter resembling the finest arrowroot, very white, delicate, and nutritive. (L.)

Arum. (De Cand. Bot. Gal. 480. Endl. Gen. Pl. 235.)

Arum Colocasia. (Willd.) *Calcas*, *Colocasia*, *Kachoo*. Levant.

Arum cordifolium.

Arum divaricatum. (Willd.) *Nælenschena*. East Indies.

Arum Dracunculus. (Linn.) *Dracontium*, *Dragons*. South of Europe.

Arum indicum. (Lour.) *Maun kachoo*. China.

Arum macrorhizon. (Willd.) East Indies.

Arum mucronatum.

Arum pentaphyllum. *Rumphal*.

Arum peregrinum.

Arum tenuifolium. (Willd.) *Arisarum*, *Friar's cowl*. South of Europe.

ARUM VIRGINICUM. (Willd.) North America.
Roots used as food. (G.)

*ARUM MACULATUM. (Linn.) (E. B. 1298.) *Arum, Barba Aaronis, Serpentaria minor, Zingiber album, Z. germanicum, Cuckoo pint, Wake robin.*

Fl. spadix purplish. April, May. Perennial. Hedge banks and groves.

Root acrid, incisive, detersive, gr. x. to ℈ j. of the fresh root, made into an emulsion with gum arabic and spermaceti, taken three or four times a day, useful in obstinate rheumatisms; has been used in washing instead of soap, but unless the juice is well separated, it frets and chaps the hands of the laundresses. (G.) The tubers are composed of a large quantity of amylaceous matter, mixed with an acrid poisonous juice; by repeated washing, and by means of heat, the acrid principle is removed, and the residuum is a bland nutritious substance of the nature of *Arrowroot*, which is manufactured in the island of Portland, and thence called *Portland sago.* It is used extensively in some parts of Devonshire. In the recent state the tubers are stimulant, diaphoretic, and expectorant. (L.)

CALADIUM. (Endl. Gen. Pl. 236.)

CALADIUM SAGITTÆFOLIUM. (Willd.) *Arum sagittæfolium, Toyos. Tannia. Eddoes.* West Indies.

Roots imported from the West Indies, eaten boiled, the rough coat being split, and the pulp squeezed out; it tastes like soap. (G.) The leaves are boiled and eaten as coleworts. (Loud.)

CALADIUM VIOLACEUM. *Arum violaceum.*
Roots esculent. (G.)

CALLA. (De Cand. Bot. Gal. 481. Endl. Gen. Pl. 239.)

CALLA PALUSTRIS. (Linn.) *Water dragons.* South of Europe.

Root used as food. (G.) The rhizomata, although acrid and caustic in the highest degree, are, according to Linnæus, made into a kind of bread, in high estimation, called "*Missebrod*" in Lapland; this is performed by drying and grinding the roots, afterwards boiling and macerating them, till they are deprived of their acrimony, when they are baked like other farinaceous substances. (L.)

COLOCASIA. (Endl. Gen. Pl. 236.)

COLOCASIA ESCULENTA. (Schott.) *Arum esculentum.* (Linn.) *Arum eltatum, Caladium esculentum.* (Vent.) *Black cacao, Cocoa root, Eddoes, Indian kale, Yam.* East and West Indies.

Roots and petioles esculent. (G.) The tubers and leaves are a common article of food among negroes, but they are so acrid as to prove uneatable by Europeans not accustomed to them; the boiled leaves produce a most inconvenient flow of saliva, and a sense of choking. (L.) This plant is cultivated in the East and West Indies, China, Japan, New Zealand, the South Sea Islands, and Madeira. The root is extremely acrid, and when eaten raw excoriates the mouth, but it becomes mild and well-tasted when boiled, or baked in hot ashes. It is said, however, to occasion costiveness.

DIEFFENBACHIA. (Endl. Gen. Pl. 238.)

DIEFFENBACHIA SEGUINA. (Schott.) *Arum regnium. A. seguinum.* (Linn.) *Caladium seguinum.* (Vent.) *Dumb cane.* West Indies.

Roots used in fomentation for the gout, or bruised with lard, to rub on dropsical limbs; expressed juice of the stem and root, with one-fourth of rum, is diuretic, but it can scarcely be swallowed. (G.) One of the most venomous of all known plants. If the rhizoma is chewed it produces a dangerous swelling of the tongue, and is said to produce dumbness when merely applied to the lips. Sir W. Hooker says, that the slightest application of the spadix to the tongue gives great pain. The juice is said to impart an indelible stain to linen. Browne says that the stem is employed in the West Indies to bring sugar to a good grain, when the juice is too viscid, and cannot be made to granulate properly by the application of lime alone. (L.)

DRACONTIUM. (Endl. Gen. Pl. 240.)

DRACONTIUM PERTUSUM. (Willd.) *Arum, Dracontium.* West Indies.

Dropsical patients are covered with the fresh leaves, which produce a slight but universal vesication. (G.)

DRACONTIUM POLYPHYLLUM. (Linn.) South America.

The spathe smells so powerfully upon the first opening, that vomiting and fainting sometimes ensue from the stench. Linnæus says, "Olfaciente attonitos redderet et entalepticos." This is one of the remedies used in Guayana against the bite of the Lebarri snake, which its spotted leaf-stalk resembles in colour; no doubt it is a powerful stimulant. Ainslie says, the prepared tuber is supposed in India to be antispasmodic, to be a valuable remedy in asthma, and to be used in hæmorrhoids; but as this species is not found in India, some other plant was probably intended. (L.)

HOMALOMENA. (Endl. Gen. Pl. 238.)

HOMALOMENA AROMATICA. (Schott.) *Calla aromatica.* (Roxb.) East Indies.

When cut this diffuses a pleasant aromatic scent, something like that of the Zingiberaceæ. The medicinal virtues of the rhizoma are in high estimation among the natives of India; it sells at from ten to sixteen rupees the maund. (L. ex Roxb.)

SCINDAPSUS. (Endl. Gen. Pl. 239.)

SCINDAPSUS OFFICINALIS. (Schott.) *Pothos officinalis.* (Roxb.) Bengal.

The fruit, cut into transverse pieces and dried, is an article of some importance in the Hindoo Materia Medica, called *Gujpippul*, and sold by the druggists under that name. (L. ex Roxb.)

SYMPLOCARPUS. (Endl. Gen. Pl. 240.)

SYMPLOCARPUS FŒTIDUS. (Nutt.) *Dracontium fœtidum.* (Linn.) *Ictodes fœtidus.* (Bige.) *Pothos fœtida.* (Michx.) *Skunk cabbage, Skunk weed.* United States.

Root, *Dracontium. P. U. S.*, antispasmodic; used in asthma and

hooping-cough ; the root of *Veratrum viridi* is sometimes gathered for it in mistake. (G.) This plant emits a powerful offensive odour; its tubers are acrid, but when dried and powdered are antispasmodic. An excellent remedy in asthma, catarrh, and chronic coughs; also employed with success in hysteric paroxysms, dropsy, rheumatism, and even epilepsy. (L.)

TYPHONIUM. (Endl. Gen. Pl.235 .)

TYPHONIUM TRILOBATUM. (Blume.) *Arum trilobatum.* (Linn.) *A. orixense.* (Roxb.) *Arisarum amboinum.* East Indies.

Root used as food. (G.) The tubers, when fresh, are exceedingly acrid. The natives of India use them in poultices to disperse or bring forward scirrhous tumours; they also apply them externally to the bite of venomous snakes, at the same time giving inwardly about the size of a field-bean. It is certainly a most powerful stimulant in proper hands. (L. ex Roxb.)

ORDER 156.—TYPHACEÆ. (De Cand. Bot. Gal. 482. Endl. Gen. Pl. 241.)

Flowers monœcious, aggregated in unisexual catkins; *perigone* three-leaved, or obsolete. *Male flower: stamens* 3—6; *filaments* long; *anthers* wedge-shaped. *Female flower: ovary* one, free, one-seeded, ovule pendulous; *style* one; *stigmas* 1—2; *fruit* one-seeded; *embryo* straight, in the middle of a fleshy or farinaceous albumen; *radicle* inferior. *Aquatic herbs* without joint; *leaves* alternate, ensiform, somewhat sheathing.

SPARGANIUM. (De Cand. Bot. Gal. 482. Endl. Gen. Pl. 241.)

*SPARGANIUM RAMOSUM. (Bauh.) (E. B. 744.) *Sparganium. Branched burr reed.*

Fl. pale yellow. July. Perennial. Ditches and ponds.

Root given with wine for the bite of the viper. (G.)

TYPHA. (De Cand. Bot. Gal. 482. Endl. Gen. Pl. 242.)

*TYPHA LATIFOLIA. (Linn.) (E. B. 1455.) *T. palustris, Typha. Cat's tail, Reed mace, Asparagus of the Cossacks.*

The young shoots are cut like asparagus and are prepared in the same manner; when, according to Dr. Clarke, they form a nutritious and excellent dish. They are considered best in the spring, like asparagus, when the plant begins to shoot, and it is stated that those who have once tasted it in this state, desire it again with increased relish.

Fl. sterile, yellow, fertile, greenish brown. July, August. Perennial. Sides of ponds and lakes.

Flowers mixed with hog's lard used to cure burns. (G.) Pollen inflammable like that of *Lycopodium*, used as a substitute for it. (L.)

ORDER 157.—CYPERACEÆ. (De Cand. Bot. Gal. 483. Endl. Gen. Pl. 109.)

Flowers glumacious, spiked, hermaphrodite, or unisexual; *glumes* or *scales* univalved; *perigone* none; *stamens* three; *filaments* capillary; *anthers* accuminate at the apex, cordate at the base; *ovary* free, simple: *style* one; *stigmas* 2—3; *fruit* (*achene*) triangular, or compressed one-seeded, indehiscent; *albumen* farinaceous; *embryo* very small, at the base of the albumen. *Perennial herbs,* resembling grasses; *stems* generally without knots; *leaves* sheathing, sheath entire.

BUECKIA. (Endl. Gen. Pl. 113.)

BUECKIA. . . . . .
Root used as a spice. (G.)

CAREX. (De Cand. Bot. Gal. 488. Endl. Gen. Pl. 110.)

*CAREX ARENARIA. (Linn.) (E. B. 928.) *Sea sedge.*
Fl. June. Perennial. Sandy sea-shores.
The creeping stems are reported to be a diaphoretic, and to be possessed of demulcent and alterative powers. They are collected on the Continent, and sold under the name of *German sarsaparilla.* (L.) Numerous experiments made in Germany tend to prove that the root possesses all the properties of *Sarsaparilla.* This plant is carefully propagated over the dikes of Holland, where its interlacing roots bind the sand together, and thus protect the country from fatal inundations. (O'Sh.)

*CAREX HIRTA. (Linn.) (E. B. 685.) *Hairy sedge.*
Fl. May, June. Perennial. Wet pastures.
Has a reputation similar to the last, and is said to be administered with advantage in rheumatic and cachectic affections. (L.)

*CAREX INTERMEDIA. (Good.) (E. B. 2042.) *C. disticha.* (Huds.) *Soft brown marsh sedge.*
Fl. June. Perennial. Marshy ground and wet meadows.

*CAREX SYLVATICA. (Huds.) *C. patula.* (D. C.) (E. B. 995.) *Pendulous wood sedge.*
Fl. May, June. Perennial. Moist woods.

CAREX VILLOSA. *Bastard sarsaparilla, German sarsaparilla.*
Roots of the whole of these used for *Sarsaparilla.* (G.)

CYPERUS. (De Cand. Bot. Gal. 483. Endl. Gen. Pl. 119.)

CYPERUS ARTICULATUS. (Linn) *Adrue.*
Root aromatic, stimulant, used for *Virginian snake root;* infusion good in vomiting and fluxes. (G.)

CYPERUS ESCULENTUS. (Linn.) *Rush nut.* South of Europe.
Root eatable, when roasted makes good coffee. (G.) Yields a preparation resembling chocolate. (O'Sh.)

CYPERUS HEXASTICHOS.
Used for the true *Cyperus rotundus.*

*CYPERUS LONGUS. (Linn.) (E. B. 1039.) *English galingale, Long-rooted cyperus, Sweet cyperus.*
Fl. light brownish. July. Perennial. Moist marshes. Rare.
Contains a bitter principle, which gives its roots a tonic and stomachic property. (L.) Tonic, diaphoretic, and diuretic. (O'Sh.)

CYPERUS ODORATUS. India.
Has a warm aromatic taste ; given in India in infusion as a stomachic. (L.)

CYPERUS PAPYRUS. (Linn.) *Papyrus antiquorum.* (Willd.) Egypt.
The *Papyrus*, or paper of the Egyptians, was obtained from this.

CYPERUS PERENNIS. *Nagur mootha.* India.

Root, dried and pulverized, used by Indian ladies for scouring and perfuming the hair. (L.)

CYPERUS ROTUNDUS. (Linn.) *Round-rooted cyperus, Motha-ghas.* India.

Roots of this, and *C. longus*, sweet-scented, heating; dose ℈ss. to ʒj. equal to the foreign aromatics; when first powdered the scent is weak, but by keeping it becomes stronger. (G.) The tubers of *C. rotundus* are said by General Hardwicke to have been given with benefit in cholera. (L.)

SCIRPUS. (De Cand. Bot. Gal. 485. Endl. Gen. Pl. 118.)

*SCIRPUS LACUSTRIS. (Linn.) (E. B. 62.) *Holoschænus, Bull-rush.*

Fl. with brown fringed glumes. July, August. Perennial. Margins of lakes and ponds.

Seed astringent, emmenagogue, diuretic, hypnotic. (G.) Used to bottom chairs, thatch cottages, and for other domestic purposes. (Lou.)

SUB-CLASS II.—GLUMACEÆ.

Perianth usually absent, its place occupied by herbaceous or scariose bracteæ, imbricated over each other; if present, surrounded by such bracteæ.

ORDER 158.—GRAMINEÆ. (De Cand. Bot. Gal. 499. Endl. Gen. Pl. 77. Lindl. Nat. Syst. 369.)

Flowers usually hermaphrodite, sometimes monœcious, or polygamous, consisting of imbricated knots, of which the most exterior are called *glumes*, the interior immediately enclosing the stamens *paleæ*, and the innermost, at the base of the ovarium, *scales*; *glumes* usually two, alternate, sometimes single, most commonly unequal; *paleæ* (*Glumellæ*, D. C.) two alternate, the lower or exterior simple, the upper or interior composed of two, united by their contiguous margins, and usually with two keels, together forming a kind of dislocated calyx; *scales* two or three, sometimes wanting; if two, collateral, alternate with the paleæ, and next the lower of them, either distinct or united; *stamens* hypogynous, 1, 2, 3, 4, 6, or more, one of which alternates with the two hypogynous scales, and is therefore next the lower palea; *anthers* versatile; *ovary* simple; *style* two, very rarely one or three; *stigmas* feathery, or hairy; *pericarp* usually undistinguishable from the seed, membraneous; *albumen* farinaceous; embryo lying on one side of the albumen at the base, lenticular, with a broad cotyledon, and a developed plumula, and occasionally, but very rarely, with a second cotyledon, on the outside of the plumula, and alternate with the usual cotyledons; *rhizoma* fibrous, or bulbous; *culms* cylindrical, usually fistular, closed at the joints, covered with a coat of silex; *leaves* alternate, with a split sheath; *flowers* in little spikes, called *locustæ*, arranged in a spiked, racemed, or panicled manner (Lindl.); *seeds* nutritive, the basis of bread, and in general form the most usual food of man and several animals. They are almost universally wholesome, some few possess an aromatic quality; the bran of most contains an acrid resin, to get rid of which the seeds are husked or pearled, by being steamed, dried, and ground in mills for that purpose. The stems contain a saccharine juice.

ANDROPOGON. (De Cand. Bot. Gal. 499. Endl. Gen. Pl. 108.)

ANDROPOGON CALAMUS AROMATICUS. (Royle.) Καλαμος αρωματικος. (*Diosc.*) India.

Known only from a short note by Dr. Royle, who states that it, and not *A. Ivrandcusa*, produces the fragrant and stimulant *Grass oil of*

Namur, and who conjectures it to have been the "sweet cane," and the "rich aromatic reed from a far country," of Scripture. It is used in India as an external application in rheumatism, in the same way as Cajeputi. It is also given as a stimulant. (L.)

ANDROPOGON CITRATUM. (De Cand.) *Lemon grass.* India.

When fresh the plant has a citron odour; when dry the smell resembles that of balm. By distillation it yields an essential oil, which is imported from Ceylon, Bombay, Cochin (Malabar coast) and Madras, under the names of *Lemon-grass oil*, or *Citronelle oil.* It is used in perfumery under the name of *oil of Verbena.* (Pereira.)

ANDROPOGON IVRANDCUSA. *A. Iwarancusa.* (Roxb.) India.

This has been said to yield *Grass* oil, but Dr. Royle denies it; *see Andropogon Calamus aromaticus.*

ANDROPOGON NARDUS. (Linn.) *Nardus indica, Indian spikenard.*

Bitter, smells like cyperus, and has the qualities of camel's hay; formerly used in *Mithridate* and *Venice treacle.* (G.)

ANDROPOGON SCHOENANTHUS. (Linn.) *Juncus odoratus, Schœnanthus, Camel's hay, Sweet rush,* Εχοινος. (*Diosc.*) Arabia.

Stalk and leaves aromatic, sharp tasted, heating, attenuant, discussive, tonic; contains a resin analogous to *Myrrh;* formerly used in *Mithridate* and *Venice treacle;* the infusion of it drank in India by those with whom the Chinese tea does not agree. (G.) The full-grown leaves, roasted, are considered by Indian practitioners as an excellent stomachic. The whole plant has an aromatic bitter flavour. (L.) Formerly brought over from Turkey in bundles about a foot long, and kept in the shops to be employed as a stimulant and deobstuent, but it is now little used. (Lou.)

ANTHOXANTHUM. (De Cand. Bot. Gal. 509. Endl. Gen. Pl. 81.)

ANTHOXANTHUM. (Linn.) *Andropogon muricatus.* (Retz.) *Cuscus, Vittie-vayr.* India.

The fibrous roots are sold by perfumers under the Tamool name of *Vittie Vayr*, or *Vetiver.*

*ANTHOXANTHUM ODORATUM. (Linn.) (E. B. 647.) *Spring grass, Sweet-scented vernal grass.*

Fl. May. Perennial. Meadows, woods, and pastures.

Nearly resembles *Camel's hay* and *Indian nard:* dried herb a substitute for tea; the very agreeable odour of new hay is owing to this grass; root aromatic; twelve pounds of hay, or at most fourteen pounds, *per diem*, is the full quantity that ought to be allowed to a horse that works regularly and moderately. (G.)

ARUNDO. (De Cand. Bot. Gal. 520. Endl. Gen. Pl. 91.)

ARUNDO DONAX. (Linn.) *Great reed.* South of Europe.

Root diuretic and emmenagogue. (G.)

AVENA. (De Cand. Bot. Gal. 511. Endl. Gen. Pl. 96.)

**AVENA SATIVA. (Linn.) *Cultivated oat.*

Fl. July. Annual. Native country unknown.

Of this there are many varieties, the chief of which are,

AVENA SATIVA ALBA. *White oats.*

AVENA SATIVA NIGRA. *Black oats.*

AVENA NUDA. (Linn.) *Naked oat, Pill, Pilcorn.*

Grain used to feed horses, fourteen pounds by the day being the usual allowance; but hard-worked horses need not be stinted; a great part passes through them unchanged, unless the oats are bruised or wetted with salt water, in which case they are completely digested; it is also made into groats and flour; *Grits, Gruau d'avoine, avenæ semina, P. L., Grutellum, C. P.*, oats cut into two or three pieces, and the husks separated by a mill; used for making a heating stimulating food. (G.) *A. nuda* is considered the best for making groats. (M. W.) Yields *Embden* and other *groats*, a common article of food among the sick, but it is scarcely medicinal.

*AVENA STRIGOSA. (Schreb.) (E. B. 1264.) *Thistle-pointed oat, Spanish oat.*

Fl. June, July. Annual. Corn-fields.

Properties and uses the same as those of *A. sativa.*

BAMBUSA. (Endl. Gen. Pl. 102.)

BAMBUSA ARUNDINACEA. (Retz.) *Arundo bambos.* (Linn.) *A. tabaxifera, Bamboo cane.*

BAMBUSA BACCIFERA. East Indies, &c.

Yields *Tabasheer.* (G.) There is, perhaps, scarcely any plant that serves for so many domestic purposes as the bamboo; it is employed in the construction of houses and bridges; masts for boats, domestic furniture, boxes, mats, utensils of various kinds, and even paper, are made from it; it is the common fence for gardens and fields, and is frequently used as pipes for conveying water. In the cavities or tubular parts is found, at certain seasons, a concrete white substance, called *Tabasheer*, an article which the Arabian physicians hold in high estimation; the nature of this substance is very different from what might have been expected in the product of a vegetable; its indestructibility by fire, its total resistance to acid, its uniting by fusion with alkalies in certain proportions, and thus forming a transparent permanent glass, and its being again separable from their compounds entirely unchanged, seem to afford the strongest reasons for considering it as very nearly identical with common siliceous earth. As to its medical virtues, although much esteemed by oriental practitioners, they are not such as to cause it to have any regard paid it in the modern practice of physic in Europe. (Lou.) A kind of vessel is formed of the space between two joints, which has been employed for holding the quicksilver imported from China.

BROMUS. (De Cand. Bot. Gal. 515. Endl. Gen. Pl. 101.)

BROMUS CATHARTICUS. (Vahl.) *Guilno.* Peru.

Seed? purgative. (G.) Said to be purgative; but Dr. Pereira remarks that this statement requires further proof, for B. secalinus, which was asserted by some authors to be poisonous, has been found by Cordier to be innocuous. (L.)

*Bromus mollis. (Linn.) (E. B. 1078.) *Soft brome grass.*
Fl. May, June. Perennial. Meadows, pastures, and banks.
Seeds said to bring on giddiness to the human species and quadrupeds, and to be fatal to poultry. (Lou.)

Bromus purgans. (Linn.) Canada.
Said to be emetic; but this requires confirmation. (L.)

*Bromus sterilis. (Linn.) *Bromus, Drank, Barren brome grass, Wild oat grass.*
Fl. June. Annual. Waste grounds and hedges.
Seed drying, corrects stinking breath; decoction vermifuge. (G.)

Calamagrostis. (De Cand. Bot. Gal. 502. Endl. Gen. Pl. 90.)

*Calamagrostis lanceolata. (Roth.) (E. B. 2159.) *Arundo calamagrostis.* (Linn.) *Grumen arundinaceum, Purple-flowered small reed, Reed grass.*
Fl. June. Perennial. Moist hedges in fenny countries.
Root diuretic and emmenagogue. (G.)

Coix. (Endl. Gen. Pl. 80.)

Coix lachryma. (Linn.) *C. ovata, Lachryma jobi, Job's tears.*
Seeds diuretic, and used to make anodyne necklaces for teething children. (G.)

Festuca. (De Cand. Bot. Gal. 517. Endl. Gen. Pl. 101.)

Festuca quadridentata. (H. B. et. Kunth.) *Sesleria quitensis.* (Spreng.) Quito.
Humboldt tells us that this plant is very poisonous; it is called *Pigouil* by the natives of Quito. (L.)

Glyceria. (De Cand. Bot. Gal. 525. Endl. Gen. Pl. 98.)

*Glyceria fluitans. (Brown.) (E. B. 1520.) *Festuca fluitans.* (Linn.) *Poa fluitans.* (Koel.) *Gramen mannæ, Typha ulva, Flote grass, Manna grass, Manna croup.*
Fl. June, August. Perennial. Stagnant waters.
Husked seeds, *Russia seeds, Manna seeds,* nutritive, sweet, eaten. (G.) Used in Russia and Poland in soups and gruels. (G.)

Hordeum. (De Cand. Bot. Gal. 531. Endl. Gen. Pl. 104.)

**Hordeum distichon. (Linn.) *Hordeum, Grudum, Jow, Common barley.*
Fl. June. Annual. Native of Tartary.

Hordeum distichon nudum. *Turkey barley.* A variety.

**Hordeum hexastichon. (Linn.) *Escourgeon, H. h. hybernum, Greek barley, Bigg, Round barley, Six-sided barley, Winter barley, Full barley.*
Fl. June. Annual.

**Hordeum vulgare. (Linn.) *H. polystichum vernum, H. tetrastichum, Bere, Square barley, Spring barley.*
Fl. June. Annual. Native of Tartary.

H. vulgare cæleste, H. cæleste, H. tetrastichum nudum, Triticospeltum, Zeopyrum, Barley wheat, Black barley, Naked barley. A variety.

HORDEUM ZEOCRITON. (Linn.) *H. distichum β, Zeocriton commune, Battledore barley, German rice, Sprat barley.* All these are cultivated for making *Pearled barley*, or *Malt. Pearl barley, Hordeum mundatum, H. perlatum, Hordeum, P. U. S., Hordei semina, P. L.* The seeds of spring barley steamed to soften the skin, then dried, and ground in a mill to separate the husk, except that lodged in the deep furrow of the seed. *Scotch pearl barley, French barley, Hordeum perlatum.* The seeds ground smaller than the last, into spherical granules, generally made from *Bigg*, or *Bere. Faro de orzo* made from *Sprat barley.* All these *Pearl barleys* are used to make a cooling gruel, to thicken soups, and as ingredients in pectoral and antifebrile drinks. (G.)

Malt, Maltum, Bina, is made from the seeds of any of the species of barley soaked in water for two or three days, or until the water turns reddish, then drained, spread about two feet thick on a floor, where it heats and emits its root or spike; it is then spread thinner for two or three days, then heaped up again, until it again heats; five pounds of spring barley produce about four of malt; malt is used to make an alterative, analeptic infusion, and its decoction is fermented to form beer and ale. *Grains*, the exhausted malt left from brewing, used in London as a food for cows, to whose milk it communicates a peculiar flavour and tendency to putrescence. (G.) In order to understand the process of malting, it may be necessary to observe, that the cotyledons of a young seed are changed by the heat and moisture of the earth into sugar and mucilage; malting is only an artificial method of effecting this object, by steeping the grain in water and fermenting it in heat, and then arresting its progress towards forming a plant by kiln drying, in order to take advantage of the sugar in distillation for spirit, or fermentation for beer. (Lou.)

LOLIUM. (De Cand. Bot. Gal. 531. Endl. Gen. Pl. 103.)

*LOLIUM TEMULENTUM. (Linn.) (E. B. 1124.) *Darnel, Bearded darnel.*

Fl. July. Annual. Corn-fields.

The grains are of evil report for causing intoxication in men, beasts, and birds, and bringing on fatal convulsions. Haller speaks of their communicating these properties to beer. (Smith.) It acts as a narcotico-acrid poison; *Darnel meal* was formerly recommended as a sedative poultice. (L.)

ORYZA. (Endl. Gen. Pl. 78.)

ORYZA SATIVA. (Willd.) *O. Indica, Oryza, Indian rice.* East Indies.

Seeds, *Rough rice, Dahn, Paddy*, used to feed birds; a spirit is distilled from it called *Arrack.* Husked seeds, *Rice*, boiled for food, and to make an astringent decoction. *Ground rice* used for puddings. (G.) By far the best imported rice is that from Carolina; it is larger and better tasted than that of India, which is small, meagre, and the grains frequently broken. As an article of diet, rice has been extolled as superior to almost any other vegetable, but whatever it may be in warmer climates, where it is a common and to many persons almost

their only food, it does not appear to be so well calculated for European constitutions as the potato; for we find that the poor constantly reject rice when potatoes can be had, and whilst these can be obtained, rice will always be considered in this country rather as a dainty to be eaten with sweet condiments, spice, fruit, &c., than as ordinary food. (Lou. from Willich's Family Cyclopædia.)

PANICUM. (De Cand. Bot. Gal. 506. Endl. Gen. Pl. 83.)

PANICUM FRUMENTACEUM. *Saumah.* India.
Seeds used in India as grain. (G.)

PANICUM GLAUCUM. (Linn.) *Setaria glauca.* (Röm. et Sch.) *Panic.* France.
Seeds used to feed poultry, and sometimes for gruel.

PANICUM ITALICUM. (Linn.) *Setaria Italica.* (Kunth.) *Cognee, Miglio panico.* India.
Seeds small, very delicate, and wholesome; added in India to beer to make it more intoxicating. (G.)

PANICUM MILIACEUM. (Linn.) *P. milium. Milium esculentum, Milium, Millet.* East Indies.
Husked seeds, *M. mundatum*, used to make gruel; also ground for flour. (G.)

PANICUM PILOSUM. *Chenna.*
Seeds used in India as grain. (G.)

PASPALUM. (Endl. Gen. Pl. 82.)

PASPALUM EXILE. (Kippist.)
Sierra Leone Millet, Fundi or *Fundungi.* Sierra Leone.
It is used, dressed in different ways, as an article of food by the Europeans and natives. It is sown and ripens about the same time as the other corn.

PASPALUM FRUMENTACEUM. (Rott.) *Warroogo.*
Seeds used for food. (G.)

PENICILLARIA. (Endl. Gen. Pl. 85.)

PENICILLARIA SPICATA. (Willd.) *Holcus spicatus, Panicum Americanum, Pennisetum spiculum, Bajorah, Couscous.* India.
Seed used as bread-corn, or made into gruel. (G.)

PENNISETUM. (Endl. Gen. Pl. 85.)

PENNISETUM DICHOTOMUM. (Delile.)
Panicum dichotomum, and Phalaris setacea. (Forsk.) *Phalaris Phalaroides* (Schult.) *Kasheia.* Arabia, Egypt.
Used as an article of food, and in some countries as fodder; also for the purposes of thatching.

PHALARIS. (De Cand. Bot. Gal. 507. Endl. Gen. Pl. 81.)

*PHALARIS CANARIENSIS. (Linn.) (E. B. 1510.) *Phalaris, Canary grass.*
Fl. yellowish green. July. Biennial. Cultivated grounds.
Juice of the herb drank in pain of the bladder; seed (*Canary seed*) used to feed small birds, and ground to make flour paste. (G.)

The culture of this grass is chiefly carried on in the Isle of Thanet, where the chaff is esteemed as a horse food. (Lou.)

PHRAGMITIS. (Endl. Gen. Pl. 91.)

*PHRAGMITIS COMMUNIS. (Trin.) (E. B. 401.) *Arundo phragmitis.* (Linn.) *A. vallatoria, Common reed.*

Fl. July. Perennial. Ditches and margins of rivers.

Root diuretic, depurative; panicles dye wool green. (G.)

SACCHARUM. (De Cand. Bot. Gal. 500. Endl. Gen. Pl. 107.)

SACCHARUM OFFICINARUM. (Linn.) *Arundo saccharum, Sugar-cane.* India.

Juice yields *Sugar.* (G.) Dr. Chisholm says the juice is the best antidote to arsenic. (L.) The canes, when cut down, are passed and repassed between the iron-rollers of the sugar mills; the juice thus squeezed out is collected and boiled with quicklime, until a thick syrup is produced, when the whole is cooled and granulated in shallow vessels; it is now the *Raw* or *Muscavado sugar* of commerce; when still further purified, it becomes the *Loaf* or *Refined sugar* of the shops. *Sugar-candy* is formed by dissolving loaf-sugar in water over a fire, boiling it to a syrup, and then exposing it to crystallize in a cool place; this is the only sugar esteemed in the east. *Barley-sugar* is a syrup from the refuse of sugar-candy, hardened in cylindrical moulds. *Rum* is a spirit distilled from the fermented juice of sugar and water. Besides the use of sugar in medicine, dietetics, and distillation, it is employed to preserve animal and vegetable substances from putrefaction, and to communicate a gloss to ink, varnishes, and pigments. When very cheap, it has been successfully employed to fatten cattle. (Lou.)

SACCHARUM SINENSE. (Roxb.) *Chinese sugar-cane.* China.

Juice yields *Sugar.* (G.) From this *Chinese sugar* is made. (L.)

SECALE. (De Cand. Bot. Gal. 530. Endl. Gen. Pl. 103.)

**SECALE CEREALE. (Linn.) *Secale, Rye.*

Fl. June. Annual. Biennial. Native of the borders of the Caspian Sea.

Var. α. *S. cereale hybernum.* (Black.) *Winter rye.*

β. *S. c. vernum.* (Host.) *Spring rye.*

Seeds malted and manufactured into *Rye spirit;* also ground to flour. *Spurred rye, Ergot, S. cornutum, P. U. S.* Diseased grains of rye, which, when ground with healthy rye and made into bread, produce gangrene of the limbs; now in use as an emmenagogue in small doses; and to accelerate the contraction of the womb in protracted labour, and passive uterine hæmorrhage; dose ten to fifteen grs., powdered, every ten minutes, or as an infusion. (G.) Produces the *Ergot,* which is by many botanists considered a morbid condition of the grains of rye; Lindley and others, however, consider it as a Fungus (*Spermoedia clavus,*) which see.

SORGHUM. (Lindl. Nat. Syst. 379. Endl. Gen. Pl. (*Andropogon*) 108.)

SORGHUM BICOLOR. (Willd.) *S. vulgare bicolor, Holcus bicolor, Milium sabæum, Barbadoes millet, Guinea corn.* Persia, &c.

SORGHUM RUBENS. (Willd.) *S. vulgare rubens, S. arduini, Holcus rubens, Saggina rubra.* Africa.

SORGHUM SACCHARATUM. (Willd.) *Holchus drachna, H. saccharatus, Yellow-seeded Indian millet.* India.

SORGHUM VULGARE. (Willd.) *S. commune, Holcus sorghum, Milium Indicum, Durra, Jooar, Indian millet, Turkey millet.* India.

Var. 1. *S. album, H. sorghum, White flat-seeded sorgho.*

2. *S. nigrum, Black-seeded sorgho.*

Seeds used as bread corn, or made into gruel. Grain of *S. vulgare*, black, yields little flour; used to feed poultry. (G.) *S. vulgare* has been introduced into Italy, Spain, Switzerland, and some parts of Germany, also into the West Indies, where, being esteemed a hearty food for labourers, it is called *Negro Guinea corn.* The flour is very white, and they make good bread of it, or rather cakes, about two inches in thickness. The bread they make of it in some parts of Italy is dark and coarse. In Tuscany it is used chiefly for feeding poultry and pigeons, sometimes for kine, swine, and horses. (Lou.)

TRITICUM. (De Cand. Bot. Gal. 528. Endl. Gen. Pl. 103.)

TRITICUM COMPOSITUM. (Linn.) *Egyptian wheat, Many-eared wheat.* Egypt.

TRITICUM MONOCOCCUM. (Linn.) *Frumentum barbatum, Spelta minor, Briza zea, Brent barley, St. Peter's corn.*

TRITICUM POLONICUM. (Willd.) *Dantzic wheat, Forty days' wheat, Polish wheat, Two months' wheat.*

TRITICUM SPELTA. (Linn.) *Spelta major, Zea dicoccos, Ador far, Gran farro, Spelt wheat.*

TRITICUM TURGIDUM. (Willd.) *Duck-bill wheat, Gray pollard, Square gray wheat, T. pyramidale, Cone wheat.*

TRITICUM VULGARE. (Vill.) *Common wheat.*

Var. α. *Æstivum, Vernello, Bled rouge, Froment de mars; Gom, Spring wheat.*

Var. β. *Hybernum, Siligo, White wheat, Red wheat, T. hybernum granis rubescentibus, Calbigia, T. æstivum hybernum; T. aristatum hybernum, Bearded wheat, Bled blanc, Brance, Cascola Bianca, T. chalipense spica breviore nitidissima alba Zea, T. Josephi*, and several other species, are cultivated for grinding into a flour to make the best bread or other farinaceous food; the seeds also serve to make starch, farro, and semolino; the Cascola bianca is cultivated principally for its brilliant slender straw, used in making hats, although it makes very good bread. The ears of wheat are occasionally eaten parched, but if used for any time are very hurtful. *Farro*, usually made from spelt wheat, steamed, dried, and pearled, as in making pearl barley. *Soojee, Semolino, Semola, Urena:* the heart of the grain, that resists the action of the mill, the stones being soft, blunt, and not set close, remaining in granules like coarse sand, mostly made from red wheat: imported from Italy. *Semoletta, Semola rarita.* A

still smaller kind of pearled wheat separated from the preceding by sifting. All of these are used for making gruel, and thickening soups and milk; the two latter for making vermicelli and other Italian pastes. *Bran, Furfur.* Mixed with fine white bread to render it laxative; a decoction of it, white drink, common mash, used as a restorative, and alterative for horses.

*Triticum repens. (Linn.) (E. B. 909.) *Agropyrum repens.* (Lind.) *Gramen officinarum, Couch grass, Creeping wheat grass.* Fl. June, September. Perennial. Fields and waste places.

Root used in pectoral decoction. (G.)

Zea. (Endl. Gen. Pl. 80.)

Zea Mays. (Linn.) *Zea, Bhoota mukha, Formentone, Indian corn, Meliconi, Maize, Turkey corn.* Asia.

Young ears roasted for food; ripe grain made into flour; used by biscuit bakers. (G.)

Zizania. (Endl. Gen. Pl. 78.)

Zizania aquatica. (H. K.) *Canada rice.* N. America.

Bears the cold better than any other species of grain, and would probably become the bread-corn of the north beyond the latitudes in which oats grow freely from its productiveness, but that its seeds do not ripen all at one time. (G.)

Order 159.—XYRIDEÆ. (Lindl. Nat. Syst. 338. Endl. Gen. Pl. 123.)

Calyx glumaceous, three-leaved; *corolla* petaloid, three-petalled; *fertile stamens* three, inserted upon the claws of the petals; *anthers* turned outwards, two-celled, sterile; *stamens* alternate with the petals; *ovary* single; *style* trifid; *stigmas* obtuse, multifid, or undivided; *capsule* one-celled, three-valved, many-seeded, with parietal placentæ; *seeds* with the *embryo* on the outside of the *albumen*, and at the end most remote from the *hilum*. *Herbaceous plants* with fibrous *roots; leaves* radical, ensiform, with dilated, equitant, scarious bases; *flowers* in terminal, naked, imbricated heads. (Lindl.)

Xyris. (Endl. Gen. Pl. 124.)

Xyris indica. (Linn.) East Indies.

The natives of Bengal consider this of great value, because they think it an easy, speedy, and certain cure for the ringworm. Rheide says the leaves are used for this purpose mixed with vinegar; and the leaves and roots, boiled in oil, are taken against leprosy. (L.) Also against the itch. (Agardh.)

Order 160.—PISTIACEÆ. (Lindl. Nat. Syst. 367. De Cand. Bot. Gal. (*Lemnaceæ*) 532.)

Flowers two, naked, enclosed in a spathe; *male stamens* definite; *female ovary* one-celled, with one or more erect ovules; *style* short; *stigma* simple; *fruit* membraneous, or capsular, not opening, one or more seeded; *seeds* with a fungous testa, and a thickened, ndurated foramen; *embryo* either in the axis of fleshy albumen, and having a lateral cleft for the emission of the plumule, or at the apex of the nucleus. *Floating plants* with very cellular, lenticular, or lobed *stems*, and *leaves* confounded; *flowers* appearing from the margin of the stems. (L.)

LEMNA. (De Cand. Bot. Gal. 532. Endl. Gen. Pl. *(Najadeæ.)* 232.)

*LEMNA MINOR. (Linn.) (E. B. 1095.) *Lens palustris, Duck's meat, Lesser duckweed.*

Fl. July. Annual. Stagnant waters.

*LEMNA POLYRRHIZA. (Linn.) (E. B. 2458.) *L. major, Greater duckweed.*

Are used externally as coolers.

PISTIA. (Endl. Gen. Pl. (*Aroideæ*) 233.)

PISTIA STRATIOITES. (Linn.) The Tropics.

The whole plant is acrid. In Jamaica it communicates this quality to the water-tanks in which it grows, and is said to give rise to the bloody flux. (Browne.) The Hindoos consider the decoction demulcent and cooling, and prescribe it in dysuria; the leaves are also made into a poultice for the piles. (L.)

ORDER 161.—BALANOPHOREÆ. (Endl. Gen. Pl. 72. Lindl. Nat. Syst. 393.)

Flowers monœcious, collected in dense heads, which are roundish or oblong, usually bearing both male and female flowers, but occasionally having the sexes distinct, the receptacle covered with scales or setæ, variable in form, here and there bearing also peltate thick scales, rarely naked. *Male flowers* pedicellate; *calyx* deeply three-parted, equal, spreading, with somewhat concave segments; *stamens* 1—3 (seldom more), epigynous, with both united filaments and anthers (cynomorium and lophophytum distinct), the latter three. *Female flowers: ovary* inferior, 1—2 celled, 1—2 seeded, crowned by the limb of the calyx, which is either marginal, and nearly inverted, or consists of from two to four unequal leaflets; *ovule* pendulous; *style* one, seldom two, filiform, tapering; *stigma* simple; terminal, rather convex; *fruit* one-celled, containing numerous spores collected in a bag resembling a solitary seed; *albumen* globose, fleshy, cellular, whitish, very large; *embryo* very minute in proportion to the albumen, roundish, whitish, enclosed in a superficial excavation, undivided. *Fungus-like plants* parasitical upon roots; *roots* fleshy, horizontal, branched; *stem* naked, or covered by imbricated scales.

CYNOMORIUM. (Endl. Gen. Pl. 74.)

CYNOMORIUM COCCINEUM. *Scarlet mushroom.* Greece, the Levant.

Styptic, ℈ j. in wine. (G.) *Cynomorium*, the old *Fungus melitensis*, is an astringent. (L.)

ORDER 162.—CYCADACEÆ. (Lindl. Nat. Syst. 312. Endl. Gen. Pl. 70.)

Flowers dicœcious, terminal. *Males* monandrous, naked, collected in cones, each floret consisting of a single scale (or anther), bearing the pollen on its under surface in two-valved cases, which adhere in clusters of two, three, or four. *Females* either collected in cones, or surrounding the central axis, but in the form of contracted leaves, without pinnæ, bearing the ovules on their margins; *ovules* solitary, naked, with no other pericarp than the scale or contracted leaf upon which they are seated; *embryo* in the midst of a fleshy or horny albumen; *radicle* next the apex of the seed, from which it hangs by a long funiculus, with which it has an organic connexion. *Trees* with a simple cylindrical trunk, increasing by the development of a single terminal bud, and covered by the scaly bases of the leaves; the wood consisting of concentric circles, the cellular zones between which are exceedingly loose, the ligneous tissue having the tubes marked by circular disks; *leaves* pinnated, not articulated, having a gyrate vernation. (L.)

Cycas. (Endl. Gen. Pl. 71.)

Cycas caffræa. (Thunb.) *Meal bark-tree.*
Pith of the trunk made into *Sago.* (G.)

Cycas circinalis. (Linn.) East Indies.
A kind of *Sago* is said to be produced by the interior of the stem, but not the true *Sago* of the shops, which is obtained from *Sagus inermis:* the fruit is eaten in the Moluccas, and a kind of flour of bad quality is procured from the kernels pounded in a mortar; it also yields a clear transparent gum, something like tragacanth. (L.)

Cycas revoluta. (Thunb.) Japan.
The wounded stem, leaves, and fruit, abound in a white transparent mucilage, which hardens into a sort of gum; it is reported that a kind of *Sago* is procured from the cellular substance occupying the interior of the stem; it is said by Thunberg that this is "supra modum nutriens," and held in the highest esteem; soldiers are able to exist on a very small quantity of it, and it is contrary to the laws of Japan to take the trees out of the country; the nuts are also eatable. (L.)

Zamia. (Endl. Gen. Pl. 71.)

Zamia angustifolia. (Jacq.) *Narrow-leaved zamia.* Bahama.

Zamia debilis (Ait. Kew.) *Long-leaved zamia.* West Indies.

Zamia furfuracea. (Ait. Kew.) *Broad-leaved zamia.* West Indies.

Zamia media. (Jacq.) West Indies.

Zamia pumila. (Linn.) *Z. integrifolia.* (Ait. Kew.) *Pigmy zamia.* West Indies.

Zamia tenius. (Willd.) West Indies.
One of the best kinds of *Arrowroot* is prepared in the Bahamas from the trunk of some species of this genus, but from which is unknown; no doubt some one of the preceding, all of which are West Indian. (L.)

DIVISION II.

CELLULARES, OR FLOWERLESS PLANTS.

(Acotyledons, or Acrogens.)

Plants composed chiefly of cellular tissue; spiral vessels for the most part absent; sexual organs absent; reproduced by spores or sporules.

Class I.—FILICOIDEÆ.

Order 163.—EQUISETACEÆ. (De Cand. Bot. Gal. 534. Endl. Gen. Pl. 58.)

Fructifications terminal, in spikes or catkins, consisting of peltate, polygonous scales, on the under side of which are from 4—7 involucres, which open longitudinally, and contain numerous globose bodies (capsules), enfolded by four filaments, clubbed at

their extremities (which some take for *stamens*); *stems* rigid, leafless, jointed, striated, the articulations sheathed at the base; *branches*, if any, mostly whorled, and as many of them will be found as there are striæ upon the stem, and teeth to the sheath, if the teeth do not continue more or less combined. (Hooker.)

EQUISETUM.

*EQUISETUM ARVENSE. (Linn.) (E. B. 2020.) *E. minor, Cauda equina minor, Corn horse-tail.*

Fl. April. Perennial. Corn-fields and road sides.

*EQUISETUM FLUVIATILE. (Linn.) (E. B. 2022.) *Equisetum cauda equina, Horse-tail, Great water horse-tail.*

Fl. April. Perennial. Muddy lakes, sides of rivers and pools.

*EQUISETUM PALUSTRE. (Linn.) (E. B. 2021.) *Marsh horse-tail.*

Perennial. Boggy soils.

Astringent and vulnerary. (G.) Have been recommended as diuretics and emmenagogues, but are not now used.

*EQUISETUM HYEMALE. (Linn.) (E. B. 915.) *E. majus, Dutch rushes, Rough horse-tail.*

Fl. July, August. Boggy grounds, middle and north of England.

Epidermis is formed of silica, used to polish wood and metals; imported from Holland. (G.)

ORDER 164.—LYCOPODIACEÆ. (De Cand. Bot. Gal. 543. Endl. Gen. Pl. 69.)

Fructifications crustaceous, sessile, either in the axillas of the leaves, then said to be axillary, or of the bracts, and then said to be spiked; *capsules* either uniform, with many seeds, or of two forms; the more common one (possibly the male) filled with spherical pulverulent globules; the other occurring more rarely (perhaps the female), containing spherical sub-scabrous *seeds*, marked with three prominent ribs beneath.

LYCOPODIUM. (De Cand. Bot. Gal. 543. Endl. Gen. Pl. 69.)

LYCOPODIUM CLAVATUM. (Linn.) (E. B. 224.) *Lycopodium, Muscus clavatus, Common club moss.*

Fl. May, November. Perennial. Heathy pastures.

Herb astringent, restores ropy wine in a few days; pollen very inflammable; used in theatres to imitate lightning, by its being thrown across the flame of a candle; repels water so strongly, that if it be strewed upon a basin of that fluid, the hand may be plunged to the bottom without being wetted; hence females employed in delicate works use it to keep their hands free from sweat; used also to roll up boluses and pills; also in the plica polonica. (G.) The decoction of the plant is said to be more serviceable than any other known means in removing plica polonica; the powder is also used to prevent excoriation in children. (L.)

LYCOPODIUM RUBRUM. (Linn.) South America.

This has been lately sent from the Caraccas under the name of *Atum condinadum*, as a medicinal plant, along with *Cuichun chulli*, but its use is not known in this country. Its bright red colour is very remarkable. (L.)

*Lycopodium Selago. (Linn.) (E. B. 233.) *Selago, Muscus erectus, Fir club moss, Upright fir moss.*

Fl. May, November. Perennial. Heathy and stony places in mountainous countries.

Violently emetic and purgative, fit only for robust constitutions, which can bear rough medicines; used by the country girls in the north to procure abortion; the decoction is employed as a wash to destroy lice in swine and cattle. (G.) In the Highlands of Scotland it is made into an irritating ointment, which is applied with advantage to the neighbourhood of the eyes as a counter-irritant; this unguent is also employed to dress foul ulcers, and might be used to keep blisters open instead of Savin; internally administered, the Selago acts violently as an emetic and cathartic; the Highlanders, we are told, notwithstanding, give it in infusion, but if the dose is not small, it is followed by serious giddiness and convulsions. Linnæus says the Swedes find the decoction serviceable as a detergent lotion, and in destroying the vermin that infest swine and other animals. Dr. Winkler says it effects appear to be sometimes irritant, but more generally narcotic in their nature. (L.)

Order 165.—FILICES. (De Cand. Bot. Gal. 536. Endl. Gen. Pl. 58.)

Fructification clustered; the *capsules* (*thecæ*) collected into clusters (*sori*) of various shapes; *sori* generally covered with an involucre, (*indusium*,) sometimes naked, situated on the under surface or margin of the frond, rarely spiked or racemed, (only of one kind upon the same species); *? male flower*, *? anthers*, very small, scattered, apparent in the scarcely unfolded leaves covered with a thin membrane; *female flower*, *capsule* (*theca*) one-celled, surrounded with an elastic ring, rarely two-valved, filled with very minute and numerous seeds. *Perennial plants*, with alternate *leaves* (*fronds*), which are often lobed or much divided, and while young, rolled up in a circinate manner from apex to base; sweetish, astringent and pectoral; a ley of the ashes of most of the species has been used as a wash to promote the growth of the hair, from the alkali contained in them stimulating the skin, whence they have been called capillary herbs.

Acrostichum. (Endl. Gen. Pl. 59.)

Acrostichum Huacsaro. (Ruiz.) Peru.

This plant is called *Huacsaro* in Peru, and *Calaguala Indiana*, or *Cordoncillo*, by the Spanish settlers; the rhizoma in cold infusion and decoction yields a red colour, and a slight astringent taste; very inferior in action to the true *Calaguala* (*Polypodium C.*) (L. ex. Ruiz.)

Adiantum. (De Cand. Bot. Gal. 541. Endl. Gen. Pl. 61.)

Adiantum æthiopicum. *Cape of Good Hope maiden hair.* Africa.

Used as an aromatic astringent.

*Adiantum Capillus Veneris. (Linn.) (E. B. 320.) *A. verum*, *A. vulgare*, *Capillus veneris*, *Maiden hair.*

Fl. May, November. Perennial. Moist rocks and walls near the sea. Bare.

A fine pectoral, slightly astringent; the decoction is a powerful emetic. (G.) The rhizoma has these qualities; mixed with syrup it forms capillaire. (L.)

ADIANTUM MELANO CAULON. *Peacock's tail Maiden hair.* India. Used in India for *Maiden hair.* (G.)

ADIANTUM PEDATUM. (Linn.) *Capillus veneris Canadensis, Canada maiden hair.* North America.

Used for *Maiden hair.* (G.) According to Smith, it is this species that is used in the manufacture of *Capillaire,* and not the C. veneris, but as it does not grow in the south of Europe, this does not appear to be correct. (L.)

ASPIDIUM. (Endl. Gen. Pl. 62.)

ASPIDIUM ATHAMANTICUM. (Kunze.)

Uncomocomo. Port Natal.

Used by the Zoolu Caffres as a vermifuge, said to be a safe and certain remedy for tapeworm. The root is the officinal part, and it is administered in the form of powder, infusion, or electuary. (Martius.)

ASPLENIUM. (De Cand. Bot. Gal. 539. Endl. Gen. Pl. 61.)

*ASPLENIUM ADIANTUM NIGRUM. (Linn.) (E. B. 1950.) *Adiantum nigrum, Black-stalked spleenwort, Oak fern.* Banks, and clefts of rocks.

*ASPLENIUM RUTA MURARIA. (Linn.) (E. B. 150.) *A. murale, Adiantum album, Ruta muraria, Salvia vitæ, Tent wort, Wall rue, Spleenwort.* Walls and clefts of rocks.

*ASPLENIUM TRICHOMANES. (Linn.) (E. B. 576.) *T. adiantum rubrum, Common maiden hair, Common wall spleenwort.* Rocks and walls.

These have all nearly the same qualities as the true maiden hair. (G.) This genus was formerly held to be a sovereign remedy for all diseases of the spleen, and even to destroy it, if employed in excess. (Lou.)

BLECHNUM. (De Cand. Bot. Gal. 540. Endl. Gen. Pl. 61.)

*BLECHNUM BOREALE. (Swartz.) (E. B. 1159.) *Lonchitis, Northern hard fern, Rough spleenwort.*

Fl. May, November. Perennial. Woods and heaths.

Root aperient and diuretic.

BOTRYCHIUM. (De Cand. Bot. Gal. 536. Endl. Gen. Pl. 66.)

*BOTRYCHIUM LUNARIA. (Swartz.) (E. B. 318.) *Lunaria, Ophioglossum lunaria, Osmunda Lunaria.* (Linn.) *Moon root, Moon wort.*

May, September. Perennial. Dry mountain pastures.

Leaves astringent.

CISTOPTERIS. (Endl. Gen. Pl. 62.)

*CISTOPTERIS DENTATA. (Hook.) *Var. β. Augustata, Adiantum album, Cyclopteris rhœtica, Polypodum rhœticum, White oak fern, Toothed bladder fern.* North of England and Wales.

*CISTOPTERIS FRAGILIS. (Bernh.) (E. B. 1587.) *Adiantum album, Cyatrea fragilis, Cyclopteris Fragilis, Polypodium fragile, Brittle bladder fern. Brittle cup fern.* Rocks and walls in the mountainous parts of Great Britain.

Used for *Maiden hair.*

GRAMMITIS. (De Cand. Bot. Gal. 537. Endl. Gen. Pl. 59.)

*GRAMMITIS CETERACH. (Swartz.) (E. B. 1244.) *Asplenium ceterach.* (Linn.) *A. scolopendrium, Blechnum squamosum, Ceterach officinalis.* (Bot. Gal.) *Scolopendrium ceterach, Ceterach, Loradilla, Milt waste, Scaly grammitis, Spleenwort.* Rocks and walls in limestone countries.

Astringent.

HEMIONITIS. (Endl. Gen. Pl. 59.)

HEMIONITIS . . . . . (Linn.) *Asplenium hemionitis, Mule's fern.*

Astringent.

NEPHRODIUM. (De Cand. Bot. Gal. (*Polystichum*) 538. Endl. Gen. Pl. 62.)

NEPHRODIUM FILIX MAS. (E. B. 1458 and 1949.) *Aspidium filix mas.* (Swartz.) *Polypodium filix mas.* (Linn.) *Nephrodium crenatum, Filix mas, Male fern, Blunt shield fern.*

Fl. May, November. Perennial. Woods and shady banks.

Root slightly bitter, astringent, a good vermifuge, in doses of ʒ j. to ʒ iiij.; expelling the tænia, either by the assistance of a strong purge, or by repeating the powdered root for some time; it is also boiled in ale to flavour it. (G.) *Rhizoma* used as an anthelmintic. The *Oil of fern*, extracted by ether, is the most efficacious form in which it is administered. (L.) The dose of the recently-prepared powder is from one to three drachms; the oil, an ethereal extract, is also much employed on the Continent; dose from half a drachm to a drachm, in the form of emulsion, electuary, or pills. (Pereira.)

OPHIOGLOSSUM. (De Cand. Bot. Gal. 536. Endl. Gen. Pl. 66.)

*OPHIOGLOSSUM VULGATUM. (Linn.) (E. B. 108.) *O. spicatum, Common adder's tongue.*

May, June. Perennial. Moist pastures, and in woods.

Used to form a celebrated ointment for wounds. (G.)

OSMUNDA. (De Cand. Bot. Gal. 536. Endl. Gen. Pl. 65.)

*OSMUNDA REGALIS. (Linn.) (E. B. 209.) *Filix florida, Ophioglossum osmunda, Flowering fern, Osmund royal.*

Fl. July, September. Perennial. Boggy places, wet margins of woods.

The young shoots, made into a conserve, are a specific for the rickets; root, boiled in water, makes a kind of starch, used to stiffen linen. (G.) Rhizoma tonic and styptic, and said to have been found serviceable in cases of rachitis. (L.)

POLYPODIUM. (De Cand. Bot. Gal. 537. Endl. Gen. Pl. 60.)

POLYPODIUM CALAGUALA. *Calaguala.* Peru.

Root sudorific. (G.) Called *Callahuala*, or *Calaguala*, in Peru. The rhizoma, when dried, has great deobstruent, sudorific, anti-venereal, and febrifugal virtues; it is used in decoction or infusion, allowing one ounce of the rhizoma to six pints of water, boiled down to three pints; seldom to be had genuine in Europe; if genuine, it is extremely bitter. (L. ex Ruiz.) Diaphoretic and diuretic, employed in rheumatism and syphilis. (Pereira.)

POLYPODIUM CRASSIFOLIUM. Peru.

Called *Puntu puntu* in Peru. The rhizoma in infusion and decoction is employed as a sudorific; the samples should be compact, heavy, difficult to cut, of even fracture, red within, rusty or chestnut-coloured without. (L. ex Ruiz.)

*POLYPODIUM DRYOPTERIS. (Linn.) (E. B. 616.) *Dryopteris, Tender three-branched polypody, Small oak fern.*

Fl. July, September. Perennial. Dry stony places.

Acrid, septic.

*POLYPODIUM VULGARE. (Linn.) (E. B. 114.) *P. quercinum. Common polypody, Polypody of the oak.*

Fl. May, November. Perennial. Rocks, walls, and trunks of trees.

Root saccharine and slightly purgative; an infusion, ʒ vj. in half a pint of hot water, may be taken at twice; by long boiling becomes bitter. (G.)

PTERIS. (De Cand. Bot. Gal. 540. Endl. Gen. Pl. 64.)

*PTERIS AQUILINA. (Linn.) (E. B. 1679.) *Filix, Filix fœmina, Common brake, Female fern.*

Fl. June, October. Perennial. Woods, heaths, or stony and sandy soils.

Root vermifuge; and in time of scarcity has been manufactured into a coarse kind of bread. (G.)

SCOLOPENDRIUM. (De Cand. Bot. Gal. 540. Endl. Gen. Pl. 62.)

*SCOLOPENDRIUM VULGARE. (Sym.) (E. B. 1150.) *Asplenium Scolopendrium.* (Linn.) *Blechnum lignifolium, Lingua cervina, Phyllitis Scolopendrium, Hart's tongue.*

Fl. May, November. Perennial. Moist shady banks.

Astringent, vulnerary, pectoral, and used in spitting of blood, fluxes, and swelling of the spleen. (G.)

CLASS II.—MUSCOIDEÆ.

ORDER 166.—MUSCI. (De Cand. Bot. Gal. 545. Endl. Gen. Pl. 46.)

Erect or creeping terrestrial or aquatic cellular *plants*, having a distinct axis of growth, destitute of a vascular system, and covered with minute, imbricated, entire, or serrated leaves; *reproductive organs* of two kinds—viz., 1st, *axillary bodies*, cylindrical or fusiform stalked sacs, containing a multitude of spherical or oval particles, which are emitted upon the application of water; 2nd, *thecæ*, hollow urn-like cases, seated upon a *seta* or stalk, covered by a membraneous *calyptra*, closed by a *lid* or *operculum*, within which are one or more rows of cellular, rigid processes, called collectively the *peristome*, and separately *teeth*, which are always some multiple of four, and combined in various degrees; the centre of the theca is occupied by an *axis* or *columella*, and the space between it and the sides of the theca is filled with *sporules; sporules* in germination protruding confervoid filaments, which afterwards ramify and form an axis of growth at the point of the ramifications. (Lind. Nat. Syst.)

HYPNUM. (De Cand. Bot. Gal. 554. Endl. Gen. Pl. 55.)

*HYPNUM SERICEUM. (Linn.) (E. B. 1445.) *Leskia sericea.*

(Hedw.) *Usnea cranii humani, Moss of a dead man's skull, Silky hypnum.*

Used in hæmorrhages.

POLYTRICHUM. (De Cand. Bot. Gal. 546. Endl. Gen. Pl. 54.)

*POLYTRICHUM VULGARE. *Polytrichum, Adiantum nigrum, Golden locks.*

Sudorific, pulmonary.

SPHAGNUM. (De Cand. Bot. Gal. 581. Endl. Gen. Pl. 47.)

*SPHAGNUM. . . . . (Schreb.) *S. commune, S. pulustre, Bog moss, Old wives'-sow.*

Scarcely combustible; used to stop cracks in chimneys; very retentive of moisture; used to pack up plants for exportation to distant countries. (G.)

ORDER 167.—HEPATICÆ. (De Cand. Bot. Gal. 584. Smith, Eng. Fl. vol. v. 97.)

Plants growing in the earth, or on trees, or in damp places, composed entirely of cellular tissue, emitting roots from their under side, and consisting of an axis or stem, which is leafless, and bordered by a membraneous expansion; such expansions sometimes unite at their margins, so as to form a broad-lobed *thallus? reproductive organs* consisting either of a peltate stalked receptacle, bearing *thecæ* on its inner surface, or of sessile naked *thecæ* either immersed or superficial; besides, there are in *Marchantia* peltate receptacles, plain on the upper surface, and having oblong bodies embedded in the disk, and also little open cups, sessile on the upper surface, and containing minute green bodies (*gemmæ*), which have the same power of producing new plants as *sporules*, and in *Anthoceros*, small cup-like receptacles, containing minute, spherical, pedunculated, reticulated bodies. (Lind.)

MARCHANTIA. (Lindl. Nat. Syst. 414. Smith, Eng. Fl. vol. v. 101.)

*MARCHANTIA CONICA. (Linn.) (E. B. 504.) *Hepatica vulgaris, Liverwort.* Sides of mill-ponds and shady banks.

The bruised fronds are singularly fragrant, resembling bergamot. (Hooker.)

*MARCHANTIA POLYMORPHA. (Linn.) (E. B. 110.) *Hepatica fontana, H. polymorpha, H. stellata, Star liver wort.* Moist and wet situations, and dry spots, when shaded.

Both of these are aperitive, acrid, astringent; used in diseases of the liver. (G.)

CLASS III.—FUNGOIDEÆ.

ORDER 168.—FUNGI. (De Cand. Bot. Gal. 728. Endl. Gen. Pl. 16.)

Plants consisting of a congeries of cellules, among which filaments are occasionally intermixed, increasing in size by addition to their inside, their outside undergoing no change after its first formation; chiefly growing upon decayed substances, frequently ephemeral and variously coloured; *sporules* lying either loose among the tissue, or enclosed in membraneous cases called *sporidia.*

Frequently poisonous; the best remedy in this case, after immediate vomiting by tickling the fauces and the exhibition of clysters, is ʒj.

of ether in a glass of water, with tincture of capsicum. The Russians, however, eat almost every species that are of any size, only stewing them thoroughly, and drinking a glass of brandy after them; and the ancients stewed suspected mushrooms with some twigs of the pear-tree, as an antidote to their bad effects. (G.) There is only one plant of this order of which much use is made for the sake of its medicinal qualities, namely, the *Spermoedia clavus*, or *Ergot*, but there are many nutritious, and a great number of poisonous species. (L.)

AGARICUS. (Endl. Gen. Pl. 40. Smith, Eng. Fl. vol. v. part 2, p. 1.)

*AGARICUS BULBOSUS. (Sow.) *Bulbous agaric.* Woods, and borders of woods.

A very active poison.

*AGARICUS DELICIOSUS. (Linn.) *Orange milked agaric.* Fir woods.

Has yellow milk, and is of exquisite flavour, but must not be confounded with *A. necator*, or *A. theiogalus*, both of which have also yellow milk, and are very poisonous. (G.) From the account given by M. Roques, it should seem that this agaric, however delicious, is not always to be eaten with impunity. (Hooker.)

*AGARICUS EBURNEUS. (With.) *Ivory agaric*, *Mugnaio.* Woods.

Sold for food in the markets of Tuscany.

*AGARICUS FŒTENS. (Pers.) *A. piperatus.* (Bull.) *Fœtid simple-gilled agaric.* Woods.

Highly acrid, odour very strong and penetrating, empyreumatic, somewhat resembling that of prussic acid, but exceedingly disagreeable.

*AGARICUS CAMPESTRIS. (Linn.) *A. edulis.* (Roques.) *Common mushroom.*

Under the name of *Mushrooms*, several species of *Agarici pratelli* are supposed to be confounded; *A. campestris* is that mostly eaten in England; all are wholesome. (G.) The most generally used, perhaps, of all agarics, and the safest; it is entensively cultivated. (Hooker.)

*AGARICUS MUSCARIUS. (Linn.) *Fly agaric.* Fir and birch woods.

Infused in milk kills flies; juice rubbed on bedsteads expels bugs; dried and powdered, gr. x. to xxx., with vinegar, cathartic, sudorific; applied externally to ulcers and gangrenes. (G.) Highly narcotic, producing in small doses intoxication and delirium (for which purpose it is used in Kamschatka,) and in larger doses, death. (Hooker.) For a very curious account of this agaric and its effects, see Lindl. Nat. Syst. p. 423.

*AGARICUS NECATOR. (Bull.) *Deadly milky agaric.* Woods and heaths.

Has yellow milk, and is very poisonous. (G.)

AGARICUS PIPERATUS. (Scop.) *Pepper agaric.* Woods.

An ingredient in the *Opiatum antituberculosum*, loses its acrid taste when dressed; eaten.

*Agaricus pratensis. (Pers.) *A. miniatus.* (Schœff.) *A. fulvosus.* (Bolt.) *A. fulvus.* (With.) *A. ficoides.* (Bull.) *Champignon, Scotch bonnets.* Pastures.

Dried and used to savour sauces. (G.)

*Agaricus procerus. (Scop.) *A. colubrinus.* (Bull.) *A. annulatus.* (Bolt.) *Large shaggy agaric.* Hedge-banks.

Is the best and most usually eaten of those whose footstalks are furnished with a moveable collar, and whose gills do not melt into a black liquid; none are known to be poisonous. (G.) Taste and smell pleasant; forms on the Continent an article of food. (Hooker.)

*Agaricus subdulcis. (Bull.) *A. lactifluus.* (Sow.) *A. cimicarius.* (Purt.) *Subacid rufous agaric.* Woods.

Eaten.

*Agaricus theiogalus. (Bull.) *Yellow milked agaric.* Amongst dead leaves.

Very poisonous.

*Agaricus torminosus. (Schœff.) *A. piperatus.* (Linn.) *Bearded pepper agaric.* Woods, heaths, and borders of fields.

Very acrid, but the Russians preserve it in salt, and eat it, seasoned with oil and vinegar. (Hooker.)

Agaricus tortilis. *Mousseron de Dieppe.*

Used as food.

Agaricus translucens. (D. C.) *Pivoulade de Saule.*

Eaten by the poor in France along with other agarici with the footstalk on the side, but most are suspicious. (G.)

*Agaricus violaceus. (Linn.) *Blewitts, Violet agaric.* Woods.

Used for making ketchup. (G.)

Boletus. (Endl. Gen. Pl. 40. Smith, Eng. Fl. vol. v. part 2, p. 147.)

Boletus æreus. (Bull.) *Black champignon.*

Eaten on the continent.

*Boletus edulis. (Bull.) *Cepatelli, Esculent boletus.* Woods.

Eaten on the continent, particularly by the Tuscans. (G.) Though neglected in this country, it appears to be a most valuable article of food; it resembles very much in taste the common mushroom, and is quite as delicate, and might be used with much advantage, as it abounds in seasons when a mushroom is scarcely to be found; like that, it can be cultivated, but by a much more simple process; as it is merely necessary to moisten the ground under oak-trees with water in which a quantity has been allowed to ferment; this method is practised with success in France. (Hooker.)

Boletus laricis. *B. purgans, Agaricus, Agaric of the larch, Male agaric.* Under or near larches.

Grows in Tartary on the larch; the interior part has been used as a drastic purge; dose ℈ j. to ʒ ij. in powder, with some ginger; or an infusion of double that weight. Imported from Turkey. (G.)

*Boletus scaber. (Bull.) *B. aurantiacus.* (Bull.) *Leccino, Scurfy boletus.*

Eaten on the continent, particularly by the Tuscans.

*Boletus subtomentosus. (Linn.) *B. chrysenteron.* (Bull.) *Subtomentose boletus.* Woods.

Eaten, at least while young. (G.) Eaten in Germany, according to Trattenick, but he does not give a very favourable account, and recommends only young specimens, old ones having frequently proved injurious. M. Roques considers the use of it as hazardous. (Hooker.)

Bovista. (Smith, Eng. Fl. vol. v. part 2, p. 302.)

Bovista nigrescens. (Pers.) *Lycoperdon bovista.* (Sow.) *Crepitus lupi, Bullfists, Mollipuffs, Puff-balls.* Heaths and dry pastures.

Narcotic; its smoke stupifies bees, but does not kill them; its very subtile seminal dust is used as a styptic. (G.)

Cantharellus. (Endl. Gen. Pl. 40.)

Cantharellus cibarius. (Fr.) *Agaricus cantharellus.* (Linn.) *Merulius cantharellus.* (With.) *Chantarelle.* Woods.

Is not a delicate species, but safe, as being unlike any poisonous kind. (G.) Smell very agreeable, like that of ripe apricots, taste agreeable, but pungent; it forms a main article of food in some districts of Europe, though dangerous when eaten raw. (Hooker.)

Clavaria. (Endl. Gen. Pl. 36. Smith, Eng. Fl. v. part 2, p. 173.)

*Clavaria coralloides. (Linn.) *C. cinerea.* (Grev.) *Goat's-beard mushroom, Grey goat's-beard, Coral clavaria.*

Eaten, and very safely, as from its coralline appearance it has not the least resemblance to any poisonous kinds, but its flesh is rather cottony, and its flavour very slight.

Dædalea. (Endl. Gen. Pl. 39. Smith, Eng. Fl. vol. v. part 2, p. 133.)

*Dædalea suaveolens. (Bull.) *Boletus suaveolens.* (Ball.) *Sweet-scented dædalea.* On trunks of willows.

Used in phthisis, ℥j. in powder four times a day, made up into an electuary. (G.) Easily distinguished by its odour (when young), which resembles aniseed. (Hooker.)

Dematium. (De Cand. Bot. Gal. 933. Smith, Eng. Fl. vol. v. part 2, p. 337.)

Dematium giganteum. (Chevall.) *Xylostroma giganteum.* (Tode.) *Oak leather.*

Found in the cracks of oaks; used in Iceland as a dressing for ulcers, and in Virginia to spread plasters on. (G.)

Elaphomyces. (Smith. Eng. Fl. vol. v. part 2, p. 306.)

*Elaphomyces granulatus. (Alb. and Schw.) *Boletus, Lycoperdon cervinum.* (Linn.) *Deer balls, Granulated elaphomyces.* Dry heaths.

Aphrodisiac, and increases the milk. (G.)

Exidia. (Smith. Eng. Fl. vol. v. part 2, p. 217.)

*Exidia Auricula Judæ. (Linn.) *Auricula Judæ, Fungus sambuci, Peziza auricula.* (Linn.) *Jew's ears.* On living trees, especially elder.

Grows on the elder; used, soaked in milk or vinegar, as a gargle in the quinsy, &c.

FERMENTUM CERVISIÆ. (Pereira.) *Mycoderma Cervisiæ.* (Desmazières.) *Torula Cerevisiæ.* (Turpin.) *Cryptococcus Fermentum.* (Kützing.) *Saccharomyces Vini et Cerevisiæ.* (Schwann and Meyen.) *Barm* or *Yeast.*

Owing to difference of opinion, Dr. Pereira has adopted the classical name above given. There are three kinds of yeast, *Brewers' yeast*, *Dried yeast*, and *Patent yeast.*

That obtained from ale is the best and strongest, and is employed for bread-making. Porter yeast is used in distilleries, but the bakers object to it; small-beer yeast is said to be rapid in its effects, but weak, and is sometimes used for making rolls.

Dried yeast, commonly called *German yeast* in London, is imported in hempen bags, containing half a hundredweight each, from Holland, Belgium, and Germany. If transported in casks they are apt to be burst, unless strongly bound with iron, owing to the carbonic acid evolved. The power of this yeast is said to be destroyed by rough handling, a blow, or fall, when it soon putrefies.

Patent yeast is a watery liquid obtained by fermenting an infusion of malt and yeast.

Yeast has been used internally as a tonic and antiseptic in typhoid fevers, and externally in the form of a poultice.

FISTULINA. (Smith, Eng. Fl. vol. v. part 2, p. 154.)

*FISTULINA HEPATICA. (With.) *Boletus hepaticus.* (Schœff.) *Hypodrys hepaticus.* (Pers.) *Bull's liver*, *Bull's tongue.* On oak, ash, walnut, &c.

Almost the only parasitic mushroom that is eaten. (G.) Much esteemed in Austria as an article of food. (Hooker.)

HELVELLA. (Endl. Gen. Pl. 38. Smith. Eng. Fl. vol. v. part 2. p. 184.)

*HELVELLA LACUNOSA. (Afz.) *H. mitra.* (Pers.) *Cinereous helvella.*

Eaten abroad.

HYDNUM. (Smith, Eng. Fl. vol. v. part 2, p. 155.)

*HYDNUM AURISCALPIUM. (Linn.) *Brouquichons.*

*HYDNUM CORALLOIDES. (Scop.) *Coral Hydnum.*

*HYDNUM ERINACEUS. (Bull.) *Hedgehog hydnum*, *Hedgehog mushroom.*

*HYDNUM REPANDUM. (Linn.) *Cheverette.*

Are all eaten. (G.) Much used for food on the continent, especially in Austria. (Hooker.)

MORCHELLA. (Endl. Gen. Pl. 38. Smith, Eng. Fl. vol. v. part 2, p. 182.)

*MORCHELLA ESCULENTA. (Linn.) *Helvella esculenta.* (Sow.) *Common morel.* Woods, orchards, cinder-walks, &c.

Wholesome and agreeable, as are all the other morchellæ; principally

imported dry from Italy; used as a sauce. (G.) Esteemed everywhere as a valuable article of food. (Hooker.)

PACHYMA. (Endl. Gen. Pl. 42. Lindl. Nat. Syst. 419.)

PACHYMA COCOS. (Fries.) *Sclerotium cocos.* (Schweinitz.)
Used in Carolina "Ad morbos sanandos." (L. ex. Fries.)

PACHYMA TUBER REGIUM. (Fries.) Moluccas.
Used in the medicine of eastern nations against diarrhœa, pains in the face, fevers, &c.; called *Uba radja*, or *Culat batu*, by the Malays. (L. ex. Fries.) The Chinese have a fungus called *Hoelen*, the size of a child's head, and considered a valuable medicine, which is supposed to be another species of the genus *Pachyma*.

PHALLUS. (Endl. Gen. Pl. 31. Smith, Eng. Fl. vol. v. part 2, p. 226.)

*PHALLUS IMPUDICUS. (Linn.) *Fungus phalloides*, *Stinkhorn.*
Intolerably fœtid at a distance, so that it is oftener smelt than seen, being supposed to be some carrion, and therefore avoided; when near, it has only the pungency of volatile salts; its odour soon fills a whole house; applied externally to painful limbs. (G.)

POLYPORUS. (Smith, Eng. Fl. vol. v. part 2, p. 134.)

*POLYPORUS FOMENTARIUS. (Linn.) *Boletus fomentarius.* (Linn.) *B. ungulatus.* (Bull.) *Real amadou*, *German tinder.* On oak, birch, &c.

*POLYPORUS IGNIARIUS. (Linn.) *Boletus igniarius.* (Linn.) *Hard Amadou*, *Spunk.* On willow, cherry, plum-trees, &c.
These, when softened by beating, are used for stopping blood; soaked in a ley of saltpetre, and dried, they are used as tinder; imported from Germany. (G.)

*POLYPORUS SULPHUREUS. (Bull.) *Boletus sulphureus.* (Bull.) Trunks of trees.
On drying evolves needle-like crystals of oxalic acid nearly pure, and is consequently poisonous. (G.) Dry specimens are often incrusted with crystals of Binoxalate of potash. (Hooker.)

RHIZOPOGON. (Smith, Eng. Fl. vol. v. part 2, p. 229.)

RHIZOPOGON ALBUS. (Bull.) *Tuber album.* (Bull.) *White Truffle.* Sandy ground in woods.
Properties the same as those of *Tuber cibarium.*

SPHŒRIA. (Endl. Gen. Pl. 34.)

SPHŒNIA SINENSIS. (Berk.) *Hia Tsao Tom Tchom.* (Reaumur.) *Hia Tsao Tong Tchong.* (Thunb.) *Hiastaotomtchom.* (Rees.) *Tong Chong Ha Cho.* (Reeves.) *Summer-plant*, *winter-worm.* (Pereira.) *Hea Tsaou Taong Chung.* (Westwood.)
Thibet.
A fungus which is developed on the neck of a caterpillar of a lepidopterous insect (probably a species of *Agrotis*). It is considered to possess strengthening and renovating properties, but on account of its scarcity is only employed in the emperor's palace. It is employed as follows:—A duck is stuffed with five drachms of the fungus, and roasted

slowly, when the flesh of the animal is thought to become impregnated, and is to be eaten twice daily for the space of eight or ten days.

SPERMOEDIA. (Endl. Gen. Pl. 16. Smith, Engl. Fl. vol. v. part 2, p. 226.)

SPERMOEDIA CLAVUS. (Fries.) *Ergotætia abortifaciens, Clavi siliginis.* (Lonicerus.) *Secale cornutum.* (Bald.) *Sclerotium clavus.* (D. C.) *Ergot. Ergot of Rye. Spurred Rye. Cockspur Rye. Cockspur.* On grains of rye, &c.

A dangerous poison if taken into the body mixed with food, producing violent spasmodic convulsions, and dry gangrene; if taken in doses of as much as two drachms, giddiness, headache, and flushed face are produced, together with pain and spasms in the stomach, nausea and vomiting, with colic, purging, and a sense of weight and weariness of the limbs; in pregnant women it is found to excite uterine action in a very remarkable manner, bringing on abortion; or facilitating parturition; hence *Ergot* is called by Dr. Pereira a parturifacient; in medicine it is extensively employed to promote uterine pains during the process of parturition, to produce the expulsion of the placenta, contraction of the uterus, and to stop uterine hæmorrhage. To a more limited extent it has been used, and, as it is said, with advantage, in epistaxis, hæmoptysis, hæmaturia, and hæmatemesis, to expel clots and polypi from the uterus, leucorrhœa, puerperal convulsions, and amenorrhœa. *Ergot* is said to be adulterated with plaster of Paris casts coloured to resemble it. (Lindl.)

SPERMOEDIA MAYDIS. (Fries.) In Colombia, in the female flowers of Zea Mays.

An *Ergot* attacks the Indian corn in Colombia, and is stated by Roulin to cause a loss of the hair and teeth on the part of both animals and men that eat it; mules fed upon it lose their hoofs, and poultry lay eggs without shell; its action upon the uterus is said to be as powerful as that of the *Rye ergot*, or perhaps more so. Maize thus infected is called *Mais peladero.* (Lindl.)

TUBER. (Endl. Gen. Pl. 30. Smith, Engl. Fl. vol. v. part 2, p. 227.)

TUBER ALBIDUM. (Cæs.) *Branchette.*

*TUBER CIBARIUM. (Sibth.) *T. gulosorum, Tubera terræ, Lycoperdon tuber, Trubs, Truffles.* Buried in the ground in beech woods.

TUBER GRISEUM. (Pers.) *Piedmont truffle, Black Truffle with white flesh.*

*TUBER MOSCHATUM. (Bull.) *Musk-scented truffle.* Very rare.

TUBER RUFUM. *Rosetti.*

Are all used as delicate sauces to soups and the like; T. griseum has a slight odour of garlic; the *Truffles* grow under ground, and are turned up, or pointed out by hogs or dogs trained for that purpose. Imported from France or Italy, either dry or preserved in olive oil. (G.)

Order 169.—LICHENES. (Lindl. Nat. Syst. 426. Smith's Eng. Fl. vol. v. 129.)

Perennial plants, often spreading over the surface of the earth, or rocks, or trees in dry places, in the form of a lobed and foliaceous, or hard and crustaceous, or leprous substance, called a *thallus;* this *thallus* is formed of a cortical and medullary layer, of which the former is simply cellular, the latter both cellular and filamentous; in the crustaceous species, the cortical and medullary layers differ chiefly in texture, and in the former being coloured, in the latter colourless; but in the fruticulose or foliaceous species, the medulla is distinctly floccose, in the latter occupying the lower half of the thallus, in the former enclosed all round by the cortical layer; *reproductive matter* of two kinds, 1, *sporules*, lying in membraneous tubers, (*thecæ*,) immersed in nuclei of the medullary substance, which burst through the cortical layer, and colour and harden by exposure to the air in the form of little disks called *shields;* 2, the separated cellules of the medullary layer of the *thallus*.

The softer kinds are slightly bitter, and used in affections of the lungs; those resembling a chalky crust are used in dyeing.

Borrera. (Lindl. Nat. Syst. 429. Smith, Eng. Fl. vol. v. p. 222.)

Borrera flavicans. (Ach.) (E. B. 2113.) *Lichen flavicans.* (Swartz.) *L. vulpinus.* (Huds.) *Brass wire borrera.* On fruit-trees, south of England.

Used to poison wolves; dyes wool yellow.

*Borrera furfuracea. (Ach.) (E. B. 984.) *Lichen furfuraceus.* (Linn.) *Branny borrera.* On old trees.

Reputed to be an astringent and febrifuge.

Cetraria. (Lindl. Nat. Syst. 429. Smith, Engl. Fl. vol. v. p. 220.)

*Cetraria Islandica. (Ach.) (E. B. 1330.) *Cladonia islandica, Lichen islandicus.* (Linn.) *Muscus catharticus, Muscus pulmonarius, Lichen, Iceland moss.* In exposed situations on the ground.

Slightly bitter; used as food in Iceland, either made into bread or boiled in water, the first water being rejected. The bitterness of this substance is removed by maceration in cold water; demulcent and nutritious, it is easy of digestion, hence it has been recommended in phthisis. (G.) Notwithstanding the presence of so large a quantity of bitter principle in this, that Sir John Franklin and his party could hardly eat it, although in a state approaching starvation, it is a favourite substance with same practitioners in affections of the pulmonary and digestive organs, particularly in phthisis, chronic catarrh, dyspepsia, and chronic dysentery; it is frequently given to sick persons as an alimentary substance, the bitter having been first removed by washing in a weak alkaline solution; the aqueous decoction, if made sufficiently strong, forms a jelly when cold; when flavoured with a little white wine it is an exceedingly pleasant diet. (Lindl. ex Pereira.)

*Cetraria nivalis. (Ach.) (E. B. 1994.) *Lichen nivalis.* (Linn.) *Snow cetraria.* Summits of the mountains in north of Scotland.

Has similar properties to the last.

Cladonia. (Lindl. Nat. Syst. 429. Smith, Eng. Fl. vol. v. p. 234.)

*Cladonia rangiferina. (Hoffm.) (E. B. 173.) *Cenomyce rangiferina.* (Ach.) *Lichen rangiferinus.* (Linn.) *Rein-deer moss.* Moors, heaths, &c.

Has an agreeable smell; used for making *Cyprus powder* or *French scent-bags*. (G.) One of the most nutritious of this order, and nearly free from the bitterness of some of the esculent kinds. (L.)

CLADONIA SANGUINEA. (Mart.) Brazil.

Rubbed down with sugar and water, this is found to be an excellent remedy in Brazil for aphthæ in children. (L.)

*CLADONIA VERMICULARIS. (D. C.) (E. B. 2029.) *Cenomyce vermicularis.* (Ach.) *Lichen vermicularis.* (Swartz.) Mountains of north of England.

Used in South America as a stomachic, under the name of *Contrayerva blanca.* (L.)

EVERNIA. (Lindl. Nat. Syst. 429. Smith, Eng. Fl. vol. v. 224.)

*EVERNIA PRUNASTRI. (Ach.) (E. B. 859.) *Lichen prunastri, Muscus arboreus, Ragged hoary evernia.* Trunks of trees.

Astringent, pulmonary, very retentive of odours, used as a basis for perfumed powders. (G.) Recommended in pulmonary affections, also as an astringent and febrifuge; it has a peculiar power of imbibing and retaining odours, and is in some request as an ingredient in sweet pots and ladies' sachets. (L.) This lichen was brought into use in Glasgow by the late Lord Dundonald, and employed (during the war) instead of gum in calico printing; it afterwards fell into disuse as a very inferior substitute for that article. (Hooker.)

GYROPHORA. (Lindl. Nat. Syst. 630. Smith, Eng. Fl. vol. v. 217.)

*GYROPHORA CYLINDRICA. (Ach.) *Umbilicaria crinita.* (Hoffm.) *Fringed gyrophora.* On mountain rocks.

*GYROPHORA PROBOSCIDEA. (Ach.) (E. B. 2485.) *Lichen proboscideus.* Mountain rocks in Highlands of Scotland.

This and the preceding constitute a part of the *Tripe de roche* on which travellers in the arctic regions of America have been forced to live in cases of emergency. It is nutritious, but mixed with a disagreeable bitterness, and productive of severe colic, and other distressing local complaints. (Lindl.) *G. cylindrica* is used in Iceland occasionally as food, and more frequently for dyeing woollen cloth of a brownish-green colour. (Hooker.)

*GYROPHORA PELLITA. (Ach.) (E. B. 931.) *Lichen velleus.* (Huds.) *Fleecy gyrophora.* On the rocks of northern mountains.

Has the same qualities as *Cetraria islandica.* (G.)

LECANORA. (Smith, Eng. Fl. vol. v. part 1, p. 186. Lindl. Nat. Syst. (*Parmelia*) 429.)

*LECANORA PARELLA. (Ach.) (E. B. 727.). *Lichen parellus.* (Linn.) *Auvergne archel, Ground archel, Orseille de terre.* Rocks.

Used like the *Canary archel* in large quantities to make *Litmus.* (G.) Also in dyeing. (L.) Extensively employed in France to produce a dye far superior to that of *Cudbear*, and quite equal to that of *Archill* (*Rocella tinctoria.*) (Hooker.)

*LECANORA TARTAREA. (Ach.) (E. B. 1879 and 156.) *Lichen rtareus.* (Linn.) *Cudbear.* On rocks in alpine countries.

Dyes purple; collected in large quantities for the dyers. (G.) This is the famous *Cudbear*, (so called after Mr. Cuthbert, who first brought it into use,) employed to produce a purple for dyeing woollen yarn. (Hooker.)

PARMELIA. (Lindl. Nat. Syst. 429. Smith, Eng. Fl. vol. v. p. 198.)

*PARMELIA AQUILA. (Ach.) (E. B. 982.) *Lichen arboreus pullus*, *L. aquilus.* (Ach.) *L. pullus.* (Light.) *Lichen, Sunburnt parmelia.* Devonshire.

Slightly astringent, used in asthma and old coughs. (G.)

PARMELIA CAPERATA. (Ach.) *Lichen caperatus?* *Arcell, Stone crottles.* Trunks of trees, rocks, and old pales.

Dyes wool of an orange colour, but if the wool is previously boiled in urine, of a russet brown.

PARMELIA OLIVACEA. (Ach.) (E. B. 2180.) *Lichen arboreus pullus*, *L. olivaceus*, (Linn.) *Olive-coloured parmelia, True liverwort.* Trees, &c.

Roborant, used in hæmorrhage and old coughs. (G.)

*PARMELIA OMPHALODES. (Ach.) (E. B. 604.) *Lichen omphalodes*, (Linn.) *Arcell corker, Cork kenkerig.* On rocks and stones.

Styptic, dyes wool a reddish-brown, made into balls. (G.)

*PARMELIA PARIETINA. (Ach.) (E. B. 194.) *Lichen parietinus*, (Linn.) *Yellow wall parmelia.* On trees and walls.

Used as a remedy for intermittent fevers, on account of its bitterness. (L.)

*PARMELIA SAXATILIS. (Ach.) (E. B. 603.) *Lichen saxatilis*, (Linn.) *Grey stone parmelia, Usnea.* Trees, rocks, and stones.

Astringent, used in hæmorrhages. (G.) In Scotland it is collected abundantly by the peasantry, and used with other species to dye woollen stuffs of a dirty purple. (Hooker.)

PELTIDEA. (Lindl. Nat. Syst. 429. Smith, Eng. Fl. vol. v. p. 214.)

*PELTIDEA APHTHOSA. (Ach.) (E. B. 1119.) *Lichen aphthosus.* (Linn.) *Muscus cumutalis.* Moist, shady, alpine rocks.

A drastic vermifuge. (G.) Said to be purgative and anthelmintic. (L.) So called because Linnæus relates that the Swedish peasants boil it in milk as a cure for the aphthæ or thrush in children. (Hooker.)

*PELTIDEA CANINA. (Ach.) (E. B. 2229.) *Lichen caninus.* (Linn.) *L. cinereus terrestris, L. terrestris, Muscus caninus, Ash-coloured ground liverwort, Canine peltidea.*

Used in hydrophobia. (G.) Formerly employed, at the suggestion of Dr. Mead, as a cure for the bite of a mad dog, whence the specific name. (Hooker.)

RAMALINA. (Lindl. Nat. Syst. 429. Smith, Eng. Fl. vol. v. p. 224.)

*RAMALINA FARINACEA. (Ach.) (E. B. 889.) *Lichen farinaceus*, (Linn.) *Narrow mealy ramalina.* Trunks and branches of trees.

Yields, like many other species of lichen, a mucilage with water, similar to gum arabic. (G.)

ROCELLA. (Lindl. Nat. Syst. 429. Smith, Eng. Fl. vol. v. p. 221.)

*ROCELLA TINCTORIA. (D. C.) (E. B. 211.) *L. rocella.* (Linn.) *Fucus, Canary archill, Chinney weed, Dyer's rocella, Herbarchel, Rock moss.* Rocks in South of England, Guernsey, Scilly Islands, &c.

Allays the tickling cough attendant upon phthisis, and from it is manufactured *Litmus.* (G.) This is the famous *Archill*, or *Orchill, Orseille* of the French, which yields the most valuable dye of all this tribe. The English blue broad cloths are first dyed with Archill, which gives their peculiar lustre and purple tint, when viewed in a certain light. (Hooker.)

SCYPHOPHORUS. (Lindl. Nat. Syst. 429. Smith, Eng. Fl. vol. v. p. 236.)

*SCYPHOPHORUS COCCIFERUS. (Hook.) (E. B. 2051.) *Lichen cornucopioides.* (Lightf.) *Cladonia coccifera.* (Schœr.) *Lichen coccifera.* (Linn.) *Scarlet cup lichen.* Heathy moors.

*SCYPHOPHORUS PYXIDATUS, (Hook.) (E. B. 1393.) *Cladonia pyxidata.* (Schœr.) *Lichen coccineus, L. pyxidatus.* (Linn.) *Muscus pyxidatus, Cup lichen, Cup moss.* Heathy places and dry woods.

This and the preceding, used in hooping-cough, and other complaints of the lungs; dose, a teacupful of the infusion, which is generally slightly emetic. (G.) Both have the credit of being astringent and febrifuge. (L.)

STICTA. (Lindl. Nat. Syst. 429. Smith, Eng. Fl. vol. v. p. 204.)

*STICTA PULMONACEA. (Ach.) (E. B. 572.) *S. pulmonaria.* (Hook.) *Lichen arborum, L. pulmonarius.* (Linn.) *Muscus pulmonarius, Pulmonaria arborea, Hazel crottles, Lungwort sticta, Oak lungs, Tree lungwort.* Trunks of trees.

Slightly bitter, opening, detersive, useful in diseases of the lungs; dyes wool of a durable orange colour; yields a gum similar to gum arabic. (G.) Employed in pulmonary affections; its nutritious properties resemble those of *Cetraria islandica;* in Siberia it is used for giving a bitter to beer. (L.)

UMBILICARIA. (Lindl. Nat. Syst. 430. Smith, Eng. Fl. vol. v. p. 219.)

*UMBILICARIA PUSTULATA. (Schrad.) (E. B. 1283.) *Lichen pustulatus.* (Linn.) *Gyrophora pustulata.* (Ach.) *Lecidea pustulata.* (Ach.) *Blistered umbilicaria.* On rocks.

May be substituted for allspice, dyes a fine red. (G.)

USNEA. (Lindl. Nat. Syst. 426. Smith, Engl. Fl. vol. v. p. 226.)

*USNEA PLICATA. (Ach.) (E. B. 1354.) *Lichen plicatus.* (Linn.) *Muscus, M. arboreus, Hairy tree moss, Stringy usnea.* Old trees, &c.

Astringent. (G.)

VARIOLARIA. (Lindl. Nat. Syst. 430. Smith, Engl. Fl. vol. v. p. 168.)

*VARIOLARIA DISCOIDEA. (Pers.) (E. B. 1714.) *V. amara,* (Ach.) *Lichen discoideus.* (Ach.) *Insipid zoned variolaria.* On the bark of trees.

Whole plant intensely bitter, has been recommended as a remedy for intermittent fevers. (L.)

*Variolaria faginea. (Pers.) (E. B. 1713.) *V. communis β. Lichen fagineus.* (Linn.) *Bitter zoned variolaria.* Old beech trees, &c.

Properties the same as the last. (L.) Strongly recommended by M. Braconnot for the production of oxalic acid, of which he found it to contain a considerable proportion; employed for that purpose in France upon a very extensive scale. (Hooker.)

The *Lichen calcareus* of the old authors, dried, powdered, and steeped in urine, dyes a fine scarlet. (L.)

Order 170.—ALGÆ. (De Cand. Bot. Gal. 935. Endl. Gen. Pl. 1.)

Leafless, flowerless plants, with no distinct axis of vegetation, growing in water, frequently having an animal motion, and consisting either of simple vesicles lying in mucus, or of articulated filaments, or of lobed fronds, formed of uniform cellular tissue; *the productive matter* either altogether wanting, or contained in the joints of the filaments, or deposited in *thecæ* of various form, size, and position, caused by dilatations of the substance of the frond; *sporules* with no proper integument, in germination elongating in two opposite directions. (Lind.)

Chondrus. (De Cand. Bot. Gal. 947. Smith, Eng. Fl. vol. v. part 1, p. 301.)

*Chondrus crispus. (Lyngh.) *Chondrus polymorhus.* (Lamour.) *Fucus crispus.* (Linn.) *Sphærococcus crispus.* (Ag.) *Carrageen, Irish moss.* On rocky shores.

Recommended as a popular remedy for pulmonary complaints, dysentery, scrofula, and rickets, given in the form of a decoction, made by boiling an ounce in a pint and a half of water or milk; it is nutrient, demulcent, and emollient. (Pereira.) On the coast of Ireland it is converted into size for the use of house-painters, and also employed in lieu of isinglass in the preparation of creams and other confectionary. (L.)

Chondrus mamillosus. Irish coast.

Found mixed with the Carrageen, or Irish moss of commerce; some samples of which, Dr. Pereira states he found to consist principally of this species.

*Chondrus membranifolius. (Grev.) *Fucus esculentus, F. teres, F. fimbriatus, Daberlochs.* On submarine rocks.

Eaten in Scotland.

Conferva. (De Cand. Bot. Gal. 989. Smith, Eng. Fl. vol. v. part 1, p. 351.)

Conferva rivularis. (Linn.) *Crow silk, Hairy river weed, River conferva.* In streams and rivers.

This green fibrous plant, found in stagnant water, smells marshy, is used as a vermifuge by some country people; it is as difficult to burn as *Fontinalis antipyretica,* adheres firmly to glass or paper, and was used by the ancients to bind up broken limbs, keeping it constantly moist. (G.)

FUCUS. (De Cand. Bot. Gal. 937. Smith, Eng. Fl. vol. v. part 1, p. 266.)

FUCUS AMYLACEUS. (O'Sh.) *Plocaria candida.* (Nees.) *Gracillaria lichenoides.* (Greville.) *Sphærococcus lichenoides.* (Agardh.) *Gigartina lichenoides.* (Turner.) *Jaffna Moss, Edible Moss, Sajor carang, Agar agar carang, Ceylon Moss.* Ceylon and Islands of the Indian Archipelago.

This plant is called by the Malays *Sajor carang*, and *Agar agar carang;* at Amboyna, it is termed *Aysana, Aytsana*, and *Rume yar waccar;* at Java, *Bulung;* at Macassar, *Dongi dongi;* and at other places, *Lottu lottu*, and *Collocane.* The jelly, mixed with sugar, is used by the Chinese as a sweetmeat; they also employ it as a paste in the arts, and as a varnish for paper. As a nutritive it is used as an article of food for invalids and children, for which purpose it is well adapted, being very easy of digestion. It is usually employed in the form of a decoction or jelly.

*FUCUS NODOSUS. (Linn.) (E. B. 570.) *Halidrys nodosa.* (Lyngh.) *Knotted fucus.*

*FUCUS SERRATUS. (Linn.) (E. B. 1221.) *Serrated fucus.* Used for the same purpose as *Bladder wrack.*

*FUCUS VESICULOSUS. (Linn.) (E. B. 1066.) *Quercus marinus, Bladdered fucus, Bladder wrack, Sea wrack.* Rocky shores.

Burned to a charcoal, is the *Vegetable Æthiops* of the shops; its ashes yield a considerable quantity of alkali; other species of fucus furnish this salt, but generally in a less quantity, therefore this is more frequently burned for that purpose; this substance, when burned, is supposed to possess some deobstruent powers, and as such, has been given in bronchocele and scrofulous affections; its efficacy depends upon the quantity of iodine it contains. The principal use to which this plant has been applied, however, is in the manufacture of *Kelp.* (G.) This has been employed as a local and constitutional agent; Dr. Russell recommended scrofulous swellings to be rubbed with the bruised vesicles, and afterwards to be washed with sea water, in order to produce the resolution and disappearance of the swelling; the effect produced appears to be owing to the iodine contained in the Fucus. (L.) These three are also extensively employed as manure.

GIGARTINA. (De Cand. Bot. Gal. 952. Smith, Eng. Fl. vol. v. part 1, p. 298.)

GIGARTINA HELMINTHOCHORTON. (Grev.) *Plocaria Helminthocorton.* (Endl.) *Fucus Helminthochorton.* (La Tour.) *Sphærococcus Helminthochorton.* (Agdh.) *Mousse de corse, Corsican moss, Corsican worm moss.* Mediterranean Sea.

This usually contains also several kinds of geniculated threadlike algæ; vermifuge, taken in the form of a thick jelly or thick mucilage; imported from France. (G.) Said to produce nausea and giddiness; it is used as an anthelmintic, and has been supposed to be particularly efficacious against the large round worm (*Ascaris lumbricoides*); it has also been recommended in cases of cancer, in consequence of Napoleon,

during his imprisonment in St. Helena, having spoken of its efficacy in that disease. (L.)

GRACILLARIA. (Lindl. Med. Bot. 630.) *Gigartina.* (Smith.)

*GRACILLARIA COMPRESSA. (Grev.) *Sphærococcus compressus.* (Agdh.) *Sphærococcus lichenoides.* (Grev.) Seashore at Sidmouth.
Makes an excellent pickle and preserve when fresh. (L.)

GRACILLARIA LICHENOIDES. (Grev.) *Fucus lichenoides.* (Turn.) *Sphæroccus lichenoides.* (Agdh.)
Highly valued for food in Ceylon and other islands of the east. (L.)

GRACILLARIA TENAX. (Grev.) *Fucus tenax.* (Turn.) *Sphærococcus tenax.* (Agdh.)
Used very extensively by the Chinese for the same purposes as glue or gum arabic. (L.)

IRIDÆA. (De Cand. Bot. Gal. 944. Smith, Eng. Fl. vol. v. part 1, p. 307.)

*IRIDÆA EDULIS. (Bory.) *Fucus edulis.* (Stackh.) *Red dulse.* Rocky shores.
Eaten while raw, also after being pinched with hot irons, in which case it tastes like roasted oysters; a red lake is prepared from it. (G.)

LAMINARIA. (De Cand. Bot. Gal. 939.. Smith, Eng. Fl. vol. v. part 1, p. 271.)

*LAMINARIA DIGITATA. (Lamour.) (E. B. 2274.) *Fucus digitatus,* (Linn.) *Sea girdle, Tangle.* Sea-shores, in deep water.
Contains a nutritive jelly, more or less saccharine, eaten both by man and beast; also burned for kelp. (G.)

*LAMINARIA SACCHARINA. (Lamour.) (E. B. 1376.) *Fucus saccharinus.* (Linn.) *Sweet fucus, Sugary laminaria.* Sea-shores.
Washed in warm water and hung up, a saccharine substance exudes from it; some eat it without washing. (G.)

LAURENCIA. (De Cand. Bot. Gal. 951. Smith, Eng. Fl. vol. v. part 1, p. 295.)

*LAURENCIA PINNATIFIDA. (Lamour.) (E. B. 1202.) *Fucus pinnatifida.* (Huds.) *Pepper dulse.* Rocks in the sea.
Taste biting, aromatic; eaten as a salad.

NOSTOC. (De Cand. Bot. Gal. 960. Smith, Eng. Fl. vol. v. part 1, p. 398.)

*NOSTOC COMMUNE. (Vauch.) (E. B. 461.) *Tremella nostoc, Nostoc, Star shoot.* Gravelly soils, rocks, pastures, &c.
A greenish jelly, eatable; infused in brandy, it causes a disgust to that liquor in those who drink of it. (G.)

PORPHYRA. (De Cand. Bot. Gal. 958. Smith, Eng. Fl. vol. v. part 1, p. 310.)

*PORPHYRA LACINIATA. (Ag.) (E. B. 2296.) *Ulva umbilicalis. Laciniated purple laver, Shield laver.* On rocks and stones in the sea.
Esculent, but requires baking for some hours to render it eatable. (G.) This, under the name of *Laver*, is much eaten in many places, especially the south of England, pickled with salt and preserved in

jars, and when brought to table, served up with lemon-juice; the inhabitants of the western islands gather it in the month of March, and after pounding and macerating it with a little water, eat it with pepper, vinegar, and butter; others stew it with leeks and onions. (Hooker.)

RHODOMENIA. (Smith, Eng. Fl. vol. v. part 1, p. 288.)

*RHODOMENIA PALMATA. (Grev.) (E. B. 1306.) *Fucus palmatus* (Linn.) *Dills, Dulesh, Dulse.* Rocky shores.

Eaten either raw, boiled, or dried, but is very tough. (G.)

SARGASSUM. (De Cand. Bot. Gal. 936. Smith, Eng. Fl. vol. v. part 1, p. 264.)

*SARGASSUM VULGARE. (Ag.) (E. B. 2114.) *Fucus natans.* (Turn.) *Lenticula marina, Vitis marina, Sea lentils.*

Used by the Portuguese and Dutch in dysuria. (G.)

*SARGASSUM BACCIFERUM. (Ag.) (E. B. 1967.) *Fucus bacciferus.* (Turn.) *F. natans, Laver, Gulf weed.*

Eaten raw as a salad; also pickled as samphire; aperient, diuretic, and antiscorbutic. (G.)

ULVA. (De Cand. Bot. Gal. 957. Smith, Eng. Fl. vol. v. part 1, p. 311.)

*ULVA LATISSIMA. (Linn.) (E. B. 1551.) *Iceland sea-grass, Broad green laver.*

*ULVA LACTUCA. (Linn.) *Lichen marinus, Oyster green, Lettuce green laver.*

Are also eaten. (G.)

THE

COLLECTION AND PRESERVATION OF PLANTS.

In collecting plants for medicinal purposes, it is important that they should be gathered at that period of their growth when the part of the plant intended for use contains the greatest amount of medicinal activity.

1. *Roots*, of herbaceous plants, should be collected either in the spring, before vegetation has commenced, or in the autumn, after the herb has withered. The latter period is probably the best for collecting the roots of most, if not all, herbaceous plants, as a large store of secretions is laid up in the roots at this time, for the support of the vital functions through the winter. Some roots, such as liquorice and dandelion, which are generally used in the recent state, may be preserved in this condition by keeping them covered with sand in a cellar. Roots that are intended to be dried, should be cleansed from adhering mould, by brushing them in a small quantity of water. The use of much water should be avoided. It is desirable that they should be dried without being previously sliced or cut, or having the cortex removed, whenever this is possible. In the cases of liquorice and marsh mallow roots, and some others, the cortex is, however, sometimes removed, before drying. Large and succulent roots require to be cut, in order to facilitate their drying. They should be dried at a temperature not exceeding 120° Fahr.

2. Roots may be preserved as specimens by keeping them immersed in *spirit*, in *acetic acid*, or in *solution of common salt*. Acetic acid, about the strength of distilled vinegar, or rather stronger, answers the purpose very well, and being cheaper than spirit, would be preferred to it.

3. *Barks* ought to be collected at that season in which they can be most easily separated from the wood. (Lond. Pharm., 1851.) The epidermis, or outer skin of the bark, being generally inefficacious, should be scraped off. The ordinary heat of the atmosphere is in general sufficient for drying barks.

4. *Herbs* ought to be collected when they begin to flower; they should be gathered on a dry day, as soon as the dew is off. Any withered or decayed leaves should be removed. If intended for use in the fresh state, they should be used on the day on which they are gathered. If intended to be dried, they should be spread out on hurdles or wicker-work, and exposed in a current of dry air, or covered with paper and exposed to the sun, until perfectly dry. The more quickly the drying is effected by these means, the better. They should then be put into wide-mouthed bottles, and kept excluded from the access of light and moisture.

5. *Leaves* are to be gathered after the flowers are blown, and before the seeds ripen. (Lond. Pharm., 1851.) Care should be taken that the leaves of biennial narcotic plants, such as Hyoscyamus and Digitalis, are not collected in the first year of their growth, as they possess less medicinal activity at this period than at the period of inflorescence. They should be dried in the same manner as herbs (4).

6. *Flowers* are to be gathered when recently blown. (Lond. Pharm., 1851.) They should be dried in the same way as herbs and leaves. In most cases it is desirable to remove the calyces. This should especially be done with roses intended for making rose-water. Red roses, before being dried, are generally cut transversely. The colour of some flowers, especially blue flowers, very soon fades. This effect is said to be in some degree prevented by dipping the flowers, for a moment, in boiling water, and then slightly pressing them before drying them. Some flowers, such as roses and elder flowers, are preserved by merely packing them in a cask with common salt, or salt and water; this method is advantageously adopted with roses and elder flowers intended for making the distilled waters.

7. *Herbs* and *leaves* are sometimes preserved together with their *proper juices*, in the following manner:—the herbs or leaves are put into wide-mouthed bottles, to which corks are carefully fitted, and these are covered with a luting of lime and soft cheese spread on calico, and secured with string or wire. Canvas cloths are then tied round the bottles separately, and, thus secured, the bottles are put into a boiler of water, which is gradually heated until it boils, and the boiling is continued for about a quarter of an hour; the water is then allowed to cool, when the bottles are removed, examined to ascertain whether they are sound, and in this state put into a cool place on their sides.

8. *Herbs*, *leaves*, and *flowers*, are preserved, as botanical specimens, *in the moist state*, by keeping them immersed in *spirit*, in *acetic acid*, or in some saline solutions, such as *solution of common salt*, or of *alum*. The first two answer the purpose best. It is sometimes found beneficial to dip the plant for a moment into boiling water, before put-

ting it into the liquid in which it is to be kept; the effect of which is probably to coagulate the albumen contained in the plant. The colour of most plants is preserved better in acetic acid than in spirit.

9. *Dry botanical specimens* are prepared by placing the plants between sheets of bibulous paper, and subjecting them to pressure, either by means of a screw-press, or with boards and straps or weights. The principal thing to be attended to in drying plants in this way, is to interpose plenty of bibulous paper between the specimens, and to change the paper every day. Some plants require to be dipped in hot water before drying them, and this is said to promote the preservation of the colours. When the specimens are sufficiently dry, they are to be fixed with gum water on sheets of paper, arranged in cases with a weight on the top, and a few pieces of camphor interspersed to prevent the attacks of insects.

10. *Fruits*, unless their efficacy depends upon the acerbity of their juices, ought to be gathered when they are ripe. They should be kept on a layer of straw, in a cool, dry, shady place. The fruits ought not to touch each other lest they should rot from want of free evaporation at the points of contact.

11. *Seeds* are to be collected when ripe, and are best kept in their own seed-vessels.

12. Fruits and seeds may be preserved by heating them in their own juices, in the same manner as has been described for the preservation of herbs and leaves (7). Gooseberries and pease are preserved in this way; or sometimes the process is a little modified,—the bottles, after being left for about half an hour in the boiling water, are filled up to the brim with boiling water, and then corked without leaving any air in the bottle. The corks must be well secured with wax or some other cement.

13. Fruits and seeds are also preserved by keeping them in *spirit*, in *acetic acid*, or in *salt and water*. In preserving fruits as specimens, it is sometimes found desirable to dip them into a hot solution of alum in water, before putting them into the spirit or acetic acid in which they are to be kept. This tends to preserve the colour and firmness of the fruit. Some very succulent fruits, as well as vegetables, require to have a portion of their aqueous juices abstracted before putting them into the liquids in which they are to be preserved. For this purpose they are sometimes immersed for a day or two in a concentrated solution of common salt. They are afterwards dipped, for a moment, into a hot solution of alum, or hot acetic acid, and then put into the cold acetic acid or spirit, in which they are to be kept.

14. *Syrup* is sometimes used for preserving fruits. The syrup should be boiled to a weak candy height, and poured hot upon the

fruit so as to cover it, the juice of the fruit being drawn out by the syrup, the latter becomes weakened, and must therefore be poured off after about twelve hours, reboiled to its former strength, and poured on the fruit again. This must be repeated, if the fruit is very juicy, a third or fourth time, or until the syrup is no longer weakened by the juice of the fruit. The peel of some fruits is preserved in this way.

15. Seeds are preserved, so as to retain their germinating power, when sent to distant countries, by covering them with honey or thick syrup. They are also sometimes preserved for this purpose by dipping them into melted wax, and allowing a coating of wax to remain over them; the wax or the sugar is to be cleaned off previous to planting them.

16. Some vegetable substances, such as *truffles*, are preserved in *olive oil*, the jars in which they are contained being closely luted, to prevent the oil from becoming rancid.

ANIMAL, VEGETABLE, AND MINERAL PRODUCTS

AND

FORMULÆ

FOR THE PREPARATION OF COMPOUNDS

EMPLOYED IN

MEDICINE, DOMESTIC ECONOMY, AND THE ARTS.

ACETUM. *Vinegar.*

Impure acetic acid, obtained by submitting spirituous liquors to the acetic fermentation. It is usually made from an infusion of raw or malted barley, when it is called *Malt vinegar*, or *British vinegar;* or from wine, when it is called *Wine vinegar*, or *French vinegar*.

Malt, or British vinegar.

This is sold of four different degrees of strength, called respectively Nos. 18, 20, 22, and 24. The last, which is the strongest, is also called *Proof vinegar;* it ought to contain about five per cent. of real acetic acid. Vinegar-makers are allowed by law to add one thousandth part by weight of oil of vitriol to these vinegars.

Lond. Ph. 1851. *Acetum (Britannicum). British vinegar.*

Acetic acid, dilute and impure, prepared by fermentation from an infusion of malt. Brownish, of a peculiar odour, specific gravity 1·019; a fluid ounce of vinegar is saturated by a drachm of the crystals of carbonate of soda. If to the same measure there be added ten minims of solution of chloride of barium ($BaCl\,\overline{3}i.$, $HO\,\overline{3}i.$), and more chloride be dropped into the filtered vinegar, nothing further is precipitated. Hydrosulphuric acid being added, its colour is not altered.

Edin. Ph. 1841. *Acetum Britannicum. British vinegar.*

Density 1006 to 1019. Sulphuretted hydrogen does not colour it. In four fluid ounces complete precipitation takes place with 30 minims of solution of nitrate of baryta. (Nitr. Baryt. 40 parts, water 800 parts.)

Wine, or French vinegar.

This is prepared usually from *white* wine, sometimes from red, but the former is preferred.

Edin. Ph. 1841. *Acetum gallicum. French vinegar.*

Density 1014 to 1022. Ammonia in slight excess causes a purplish muddiness, and slowly a purplish precipitate. In four fluid ounces complete precipitation takes place with 30 minims of solution of nitrate of baryta. (Nitr. Baryt. 40 parts, water 800 parts.)

Dubl. Ph. 1850. *Acetum gallicum. French vinegar.*

ACETUM AROMATICUM. *Aromatic vinegar.*

This is strong acetic acid, with camphor, and essential oils of cloves, lavender, rosemary, &c., dissolved in it. The acid should be nearly as strong as the glacial acetic acid.

The following are good formulæ for—

Aromatic vinegar.

℞ Strongest acetic acid . .	Oj.
Camphor	℥ij.
Oil of cloves	℥iij.
Oil of lavender	℥j.
Oil of cinnamon	gtt. xx.
Oil of rosemary	gtt. xxx.

Mix.

Acidum aceticum aromaticum.

Ph. Borussica, 1847, and Codex Medic. Hamburg, 1845.

℞ Oil of cloves	ʒj.
Oil of lavender	
Oil of citron, āā	℈ij.
Oil of bergamot	
Oil of thyme, āā	℈j.
Oil of cinnamon	gtt. x.
Strongest acetic acid . . .	℥j.

Mix, to form a limpid, yellowish-brown solution.

The following formula was given for it in the Edin. Ph. 1839, under the name of—

Acidum aceticum aromaticum.

℞ Rosemary, dried	
Origanum, dried, āā . . .	℥j.
Lavender, dried	℥ss.
Cloves, bruised	ʒss.
Acetic acid (sp. gr. 1·068).	Ojss.

Macerate for seven days, strain and express strongly, and filter the liquor.

This has been omitted in the Edin. Ph. 1841. The *Acidum aceticum camphoratum* of the Edinburgh College was probably intended as a substitute.

Acidum aceticum camphoratum.

Edin. Ph. 1841.

℞ Camphor	℥ss.
Acetic acid	f℥vjss.

Pulverize the camphor with the aid of a little rectified spirit, and dissolve it in the acid.

Dubl. Ph. 1850.

℞ Camphor	℥j. (D)
Rectified spirit.	f℥j.
Strong acetic acid. . . .	f℥x.

Reduce the camphor to powder, by trituration with the spirit; then add the acid, and dissolve.

ACETUM CANTHARIDIS. (*Epispasticum.*) *Vinegar of cantharides.* (*Epispastic.*)

Lond. Ph. 1851.

℞ Cantharides rubbed to powder	℥ij.
Acetic acid	f℥xx.

Macerate the cantharides with the acid for eight days, frequently shaking. Lastly, press and strain.

Edin. Ph. 1841.

℞ Cantharides, in powder. . .	℥iij.
Acetic acid	f℥v.
Pyroligneous acid	f℥xv.
Euphorbium, in coarse powder	℥ss.

Mix the acids, add the powders, macerate for seven days, strain and express strongly, and filter the liquors.

Dubl. Ph. 1850.

℞ Spanish flies, in fine powder	℥iv. (D).
Strong acetic acid . .	f℥iv.
Acetic acid of commerce (sp. gr. 1·044)	f℥xvj.

Mix the acid, and, having added the flies, macerate in a close vessel for fourteen days; then strain through flannel with expression, and filter so as to obtain a clear liquor.]

These preparations are intended to be used for producing speedy vesication. A pledget wetted with the *Acetum cantharidis*, applied to the skin, and covered with a piece of adhesive plaster, will often produce a blister in from half an hour to an hour. This effect, however, cannot be

depended upon, especially with the preparation of the London College. Several medical men in London are in the habit of ordering *Acetum cantharidis*, made according to the London Pharmacopœia, but substituting for the acetic acid there ordered, a much stronger acid—that used for making *Aromatic vinegar*—which is nearly three times the strength of the acetic acid of the London College. When thus prepared it will generally raise a blister in five or ten minutes.

Acetum colchici. *Vinegar of Meadow saffron.*

Lond. Ph. 1851.

℞ Cormus of meadow saffron, dried ℥iiiss.
Diluted acetic acid . . . Oj.
Proof spirit. . . . . f℥iss.

Macerate the meadow saffron with the acid in a closed vessel for three days; then press out (the liquor) and set it by, that the dregs may subside; lastly, add the spirit to the strained liquor.

Edin. Ph. 1841.

℞ Colchicum bulb, fresh and sliced ℥j.
Distilled water . . . . . f℥xvj.
Proof spirit . . . . . f℥j.

Macerate the colchicum in the vinegar for three days in a covered glass vessel; strain and express strongly; filter the liquors; and add the spirit.

Dubl. Ph. 1850.

℞ Colchicum bulbs, dried and bruised . . . . . ℥j. (D)
Acetic acid of commerce (sp. gr. 1·044) . . . . . f℥iv.
Distilled water. . . . . f℥xij.

In the acid, diluted with the water, macerate the colchicum, in a close vessel, for seven days; then strain with expression, and filter.

Acetum destillatum. *Distilled vinegar.*

Lond. Ph. 1851.

Take of vinegar a gallon:—

Let seven pints distil in a sand-bath.

Its specific gravity is 1·0065. A fluid-ounce of it is saturated by 57 grains of the crystals of carbonate of soda.

Edin. Ph. 1841.

Take of vinegar (French by preference) eight parts; distil over with a gentle heat seven parts; dilute the product, if necessary, with distilled water, till the density is 1005.

Note.—Density 1005; colourless; unaltered by sulphuretted hydrogen; one hundred minims neutralize 8 grains of carbonate of soda.

Acetum digitalis. *Vinegar of digitalis.*

Ph. Borussica 1847.

℞ Leaves of foxglove, cut . . ℥j.
Common vinegar . . . . ℥viii.

Macerate for six days, press, filter, and keep it in a well-stoppered bottle.

Note.—Limpid; of a reddish colour. Maximum dose for an adult, 30 drops.

Acetum opii. *Vinegar of opium.*

Edin. Ph. 1841.

℞ Opium . . . . . ℥iv.
Distilled vinegar . . . f℥xvj.

Cut the opium into small fragments, triturate it into a pulp with a little of the vinegar, add the rest of the vinegar, macerate it in a closed vessel for seven days, and agitate occasionally. Then strain and express strongly, and filter the liquor.

Dubl. Ph. 1850.

℞ Opium in coarse powder ℥iss. (D)
Dilute acetic acid . . Oj.

Macerate for seven days in a close vessel, with occasional agitation; then strain with expression, and filter.

U. S. Ph. 1851. (*Black Drop.*)

℞ Opium, in coarse powder . ℥viij.
Nutmegs in coarse powder . ℥iss.
Saffron . . . . . ℥ss.
Sugar . . . . . ℥xij.
Diluted acetic acid, a sufficient quantity.

Digest the opium, nutmeg, and saffron, with a pint and a half of the diluted acetic acid on a sand-bath, with a gentle heat, for forty-eight hours, and strain. Digest the residue with an equal quantity of the diluted acetic acid in the same manner, for

twenty-four hours; then put the whole into a percolator and return the filtered liquor as it passes until it comes away quite clear. When the filtration has ceased, pour diluted acetic acid gradually on the materials remaining in the instrument, until the whole quantity of filtered liquid equals three pints. Lastly, add the sugar, and, by means of a water-bath, evaporate to three pints and four fluid ounces.

ACETUM PROPHYLACTICUM. *Prophylactic vinegar. Vinaigre des quatre voleurs. Acetum quatuor furum. Four thieves' vinegar. Marseilles vinegar.*

It is said that during the plague at Marseilles, four persons, by the use of this preservative, attended, unhurt, multitudes of those that were affected; that under colour of these services they robbed both the sick and the dead, and that being afterwards apprehended, one of them saved himself from the gallows by disclosing the composition of the prophylactic, which was as follows:—

℞ Fresh tops of common wormwood, Roman wormwood, rosemary, sage, mint, rue, each	℥jss.
Dried lavender flowers	℥ij.
Garlic, calamus aromaticus, cinnamon, cloves, nutmegs, each	ʒij.
Strong vinegar	8 pints.

Digest in the heat of the sun or a sand-bath, in a matrass closely stopped, for twelve days; strain, press, and filter; and afterwards add one ounce of camphor dissolved in spirit of wine.—*Lewis's Dispensatory.*

This formula has since been much simplified, and was introduced as follows, under the title of

Acidum aceticum aromaticum.

Edin. Ph. 1817.

℞ Dried rosemary and sage, each	℥j.
Dried lavender flowers	℥ss.
Bruised cloves	ʒss.
Distilled vinegar	℔ij.

Macerate for seven days, press, and filter.

Acetum aromaticum.

Ph. Borussica 1847.

℞ Leaves of rosemary	
,, sage	
,, pepperment, āā	℥ij.
Cloves	
Zedoary root	
Angelica ,, āā	℥ss.
Common vinegar	℔vj.

Macerate for four days in a closed vessel, then press, and filter. To be kept in a well-closed bottle. It will be limpid, and of a reddish-brown colour.

ACETUM RUBI IDÆI. *Vinegar of raspberries. Raspberry vinegar.*

Ph. Borussica 1847.

℞ Raspberry fruit	℔j.
Common vinegar	℔ij.

Macerate in a well-closed glass vessel, until the liquor has acquired a bright red colour; then strain without pressure, filter, and keep it in bottles, filled and well-closed.

ACETUM SCILLÆ. *Vinegar of squill.*

Lond. Ph. 1851.

℞ Squill, recently dried and bruised	℥iiss.
Diluted acetic acid	Oj.
Proof spirit	f ℥iss.

Macerate the squill with the acid with a gentle heat in a closed vessel, for three days; then press out (the liquor) and set it by, that the dregs may subside; lastly, add the spirit to the strained liquor.

Edin. Ph. 1841.

℞ Dried squill in small fragments	℥v.
Distilled vinegar	Oij.
Proof spirit	f℥iij.

Macerate the squill in the vinegar for seven days in a covered glass vessel, strain and express the liquor, add the spirit, and filter the whole.

Dubl. Ph. 1850.

℞ Squill dried and bruised . ℥ij. (D)
Acetic acid of commerce (sp. gr. 1·044) . . . f℥iv.
Distilled water . . . . f℥xij.

In the acid, diluted with the water, macerate the squill in a close vessel for seven days; then strain with expression, and filter.

Acidum aceticum, *Acetic acid,*

Is considered to be peculiar to the organic kingdom. It exists free or combined with potash, lime, or ammonia, in the juices of many vegetables. It is obtained as a product of the acetous fermentation, and of the destructive distillation of wood; and by one or other of these means, the acetic acid of commerce is always produced. The chemical composition of acetic acid as it exists in combination with bases is $C^4H^3O^3$. The liquid to which the name *Acetic acid* is usually applied contains water in addition to the above; and the proportions of water contained in the acid ordered under the name of acetic acid in the three British Pharmacopœias differ considerably.

Lond. Ph. 1851. *Acidum aceticum. Acetic acid.*

An acid prepared from wood by fire' purified. Destitute of colour, with a very sharp odour, specific gravity 1·048; by heat it goes off in vapour. Nothing is thrown down from it, either nitrate of silver or chloride of barium being added. A strip of silver being digested with it, and hydrochloric acid being afterwards dropped in, nothing is thrown down. Neither is the colour changed by hydrosulphuric acid nor ammonia, nor ferrocyanide of potassium being added after ammonia. 100 grains of this acid are saturated by 87 grains of the crystals of carbonate of soda.

Edin. Ph. 1841.

Take of acetate of lead any convenient quantity; heat it gradually in a porcelain basin by means of a bath of oil or fusible metal, (8 tin, 4 lead, 3 bismuth,) to 230° F., and stir till the fused mass concretes again; pulverize this when cold, and heat the powder again to 320°, with frequent stirring, till the particles cease to accrete. Add 6 ounces of the powder to 9 fluid drachms and a half of pure sulphuric acid contained in a glass matrass; attach a proper tube and refrigeratory; and distil from a fusible metal bath with a heat of 320° to complete dryness. Agitate the distilled liquid with a few grains of red oxide of lead to remove a little sulphurous acid, allow the vessel to rest a few minutes, pour off the clear liquor, and redistil it. The density is commonly from 1063 to 1065, but must not exceed 1068·5.

Note.—Density not above 1068·5, and increased by 20 per cent. of water: colourless: unaltered by sulphuretted hydrogen or nitrate of baryta: one hundred minims neutralize at least 216 grains of carbonate of soda.

Acidum aceticum glaciale. *Glacial acetic acid.*

Dubl. Ph. 1850.

Take of acetate of lead any convenient quantity. Place it in an oven at about the temperature of 300°, until it ceases to lose weight, and, having then brought it by trituration to a fine powder, let it be introduced into a flask or retort, and exposed to an atmosphere of dry muriatic acid gas, until very nearly the whole of it exhibits a damped appearance. The flask or retort being now connected in the usual manner with a Liebig's condenser, let heat be applied by means of a chloride-of-zinc bath, until the entire of the acetic acid shall have distilled over.

The muriatic gas should be slowly disengaged from the materials directed in the formula for acidum muriaticum, using eight ounces of salt for every pound of anhydrous acetate of lead, and, to render it quite dry, it should, before being conducted into the vessel containing the sugar of lead, be made to bubble through oil of vitriol, and then pass through a long tube packed with small fragments of fused chloride of calcium.

The specific gravity of this acid is 1·065.

Dubl. Ph. 1850. *Acidum aceticum forte (Acidum aceticum).*

℞ Glacial acetic acid . . . f℥vj.
Distilled water . . . . f℥iv.
Mix.

The specific gravity of this acid is 1·066.

Dubl. Ph. 1850. *Acidum aceticum e Ligno venale.*

Acetic acid of commerce; purified pyroligneous acid. Sp. gr. 1·044.

ACIDUM ACETICUM DILUTUM. *Diluted acetic acid.*

Lond. Ph. 1851.

℞ Acetic acid . . . . f℥xxiij.
Distilled water . . . Oj.

To the acid add as much water as may be necessary that it may accurately fill a pint measure, and mix.

The specific gravity is 1·008. A fluid ounce of it is saturated by 57 grains of the crystals of carbonate of soda.

Dubl. Ph. 1850.

℞ Acetic acid of commerce (sp. gr. 1·044.) . . . Oj.
Distilled water . . . . Ovij.
Mix.

The specific gravity of this acid is 1·006.

ACIDUM ARSENICUM. *Arsenic acid.* AsO^5.

Dissolve arsenious acid in hydrochloric acid, with the aid of heat; then add nitric acid in small quantities at a time, as long as red vapours are given off. Allow the liquor to stand, that any insoluble matter may subside, from which the clear part is to be decanted, and then carefully evaporate to perfect dryness. It will form a white powder, anhydrous, soluble in water, and forming a strongly-acid solution.

ACIDUM ARSENIOSUM. *Arsenious acid. White arsenic.* AsO^3.

Obtained by roasting certain arsenical ores in furnaces adapted for the purpose, and purifying the product by sublimation. It is met with in commerce, in powder, and in vitreous masses. The powder, to which the name white arsenic is usually applied, is sometimes adulterated with chalk, sulphate of barytes, or sulphate of lime. The vitreous arsenious acid, when first prepared, is in transparent, or nearly transparent pieces, which on exposure to the air become opaque, sometimes slightly yellow, and having the appearance of layers or strata, differing in colour or opacity. This kind is generally free from adulteration.

Lond. Ph. 1851. *Acidum arseniosum. Arsenious acid.* A metallic acid prepared by sublimation.

White or slightly yellowish, for the most part opaque, sometimes also, when freshly broken, more or less permeated by the light; heated in a glass tube it is sublimed of a white colour, afterwards when it has cooled it is changed into octohedral crystals destitute of colour. Mixed with charcoal and exposed to heat, it is reduced to arsenic and is sublimed, exhaling an alliaceous odour; afterwards when it has cooled it adheres to the tube, shining like a metal. It is dissolved by boiling water, from which it falls down, in octohedral crystals, when it has cooled. This solution throws down a yellow substance on hydrosulphuric acid being added; ammonia and afterwards nitrate of silver being added, a lemon-coloured substance; but potash and sulphate of copper being added, a greenish substance. If 100 grains of this acid are boiled in diluted hydrochloric acid, and when the solution has cooled hydrosulphuric acid be mixed with it, 124 grains of tersulphuret of arsenic are thrown down.

Edin. Ph. 1841. *Arsenicum album. Sesquioxide of arsenic. Arsenious acid.* Entirely sublimed by heat.

Dubl. Ph. 1850. *Acidum arseniosum purum. (Arsenici oxydum album sublimatum.)*

Take of commercial white oxide of arsenic any convenient quantity:

Place it in a Florence flask, the neck of which is made to pass into that of a second flask of larger size, and, applying to the *former* a regulated heat, by suspending it beneath a semi-cylindrical hood of sheet-iron, a few inches above a small charcoal fire, cause the arsenic to sublime into the *latter*. This sublimation should be conducted under a flue with a good draught, so as to protect the operator from inhaling any vapours which may escape being condensed.

Acidum benzoicum. *Benzoic acid.* $C^{14}H^5O^3$, HO.

Lond. Ph. 1851.

An acid procured from benzoin by sublimation. The crystals.—White, or nearly white, heat being cautiously applied it flies off exhaling a peculiar odour. It is sparingly dissolved in water, copiously in rectified spirit. It is also dissolved in solution of ammonia, potash, soda and lime, and is precipitated from them by hydrochloric acid.

Edin. Ph. 1841.

Take of benzoin any convenient quantity, put it into a glass matrass, and by means of a gradually-increasing heat, sublime as long as anything rises. Squeeze the sublimate between folds of filtering-paper, to remove the oil as much as possible, and sublime the residuum again.

Note.—Colourless; sublimed entirely by heat.

Dubl. Ph. 1850.

Take of benzoin any convenient quantity.

Place it in a small cylindric pot of sheet iron, furnished with a flange at its mouth; and having fitted the pot into a circular hole in a sheet of pasteboard, interpose between the pasteboard and flange a collar of tow, so far as to produce a nearly air-tight junction. Let a cylinder of stiff paper, open at one end, eighteen inches high, and having a diameter at least twice that of the pot, be now placed in an inverted position on the pasteboard, and secured to it by slips of paper and flour-paste; a couple of inches of the lower part of the pot being passed through a hole in a plate of sheet tin, which is to be kept from contact with the pasteboard by the interposition of a few corks; let a heat just sufficient to melt the benzoin (that of a gas lamp answers well) be applied, and continued for at least six hours. Let the product thus obtained, if not quite white, be enveloped in bibulous paper, then subjected to powerful pressure, and again sublimed.

Synonymes.

Flores Benzöini. Lond. Ph. 1721 and 1746.

Flores Benzoës. Lond. Ph. 1788.

Acidum boracicum. *Boracic acid. Sal sedativum Hombergi. Homberg's Sedative salt.* BO^3,3HO.

1.

Dissolve ℥viij of borax in a sufficient quantity of warm water, and add thereto ℥iij of oil of vitriol. Evaporate the mixture till a pellicle appears on the surface, then remove the solution from the fire, and collect, wash, and dry the crystals which form as it cools.

2.

Put ℥viij of powdered borax into a wide-necked retort; pour thereon ℥iij of water; then add ℥iij of oil of vitriol. Place the retort over a furnace, adapt a receiver to it, and increase the fire until the vessel becomes red-hot. The sedative salt will rise into the neck of the retort, and is to be swept out with a feather; and a little liquor will pass into the receiver. When the vessels have become cold, pour back the distilled liquor into the retort, and sublime again, repeating the process as long as any of the salt rises. In this process the fire must be expeditiously raised when the matter begins to grow dry, for it is only at this period that the acid sublimes in any quantity.—*Lewis's Dispensatory.*

Boracic acid is now obtained in abundance in Tuscany, as a natural product, carried up from subterraneous cavities by the combined agencies of heat and aqueous vapour (as in the process last described), and retained and collected in reservoirs of

water, called *lagoons*, on the surface of the earth. This water is afterwards evaporated until it deposits the acid on cooling. Borax is now made from this natural boracic acid.

Boracic acid was formerly considered a mild anodyne in doses of from 2 to 18 grains.

Acidum citricum. *Citric acid.* $C^{12}H^5O^{11},3HO$.

Exists in large quantity in the juices of many fruits, especially those of the genus *Citrus*. It constitutes nearly the whole of the free acid in the fruits of Dulcamara, Dog-rose, Cranberry, &c.; and is found mixed with malic acid in gooseberries, currants, strawberries, raspberries, and cherries.

For commercial purposes citric acid is usually obtained from the juice of lemons or of limes.

Lond. Ph. 1851.

Acidum citricum. Citric acid. An acid procured from the juice of the fruit of *Citrus Limonum* and other species.

Destitute of colour, the whole or nearly the whole dissipates in the fire. It is dissolved in water and in spirit. That which is thrown down from the aqueous salt by acetate of lead, is dissolved by nitric acid. There is no salt prepared from potash, except the tartrate, that throws down anything with it. Sparingly added to a cold solution of lime it does not render it turbid. 100 grains dissolved in water, are saturated by 205·7 grains of the crystals of carbonate of soda.

Edin. Ph. 1841.

Take of lemon-juice, Oiv.

Prepared chalk, ℥ivss, or a sufficiency.

Diluted sulphuric acid, f℥xxxvj, or in the same proportion to the chalk required.

Boil the lemon-juice, allow it to rest, pour off the clear liquor, boil this again, and add the chalk to it while hot by degrees till there is no more effervescence, and the liquor ceases to taste acid. Collect the precipitate, and wash it with hot water till the water passes from it colourless. Squeeze the residuum in a powerful press; mix it uniformly with 2 pints of distilled water; and then add the sulphuric acid by degrees and with constant stirring. Try whether a small portion of the liquid, when filtered, gives with solution of nitrate of baryta a precipitate almost entirely soluble in nitric acid; and if the precipitate is not nearly all soluble, add a little citrate of lime to the whole liquor till it stand this test. Separate now the clear liquor by subsidence or filtration, washing the insoluble matter with cold water, and adding the washings to the liquor: concentrate with a gentle heat till crystals form on the surface: set the liquor aside to cool and crystallize; and purify the crystals by repeated solution and crystallization till they are colourless.

Saturating power of Citric acid.

20 grains of citric acid (or f℥v lemon-juice,) will saturate	Bicarb. potash.	Carbonate potash.	Sesquicarb. ammonia.	Carbonate soda.	Sesquicarb. soda.
	29 grs.	24 grs.	17 grs.	41 grs.	24 grs.
20 grains of	Bicarb. potash.	Carbonate potash.	Sesquicarb. ammonia.	Carbonate soda.	Sesquicarb. soda.
Requires of citric acid for saturation . . .	14 grs. (or f℥iijss lemon-juice)	17 grs. (or f℥iv. lemon-juice)	24 grs. (or f℥vj lemon-juice)	10 grs. (or f℥ijss. lemon-juice)	17 grs. (or f℥iv. lemon-juice)

Note.—A solution in four parts of water is not precipitated by carbonate of potash: when incinerated with the aid of red oxide of mercury, no ash is left, or a mere trace.

Solutio acidi citrici. Artificial Lemon-juice.

This is made by dissolving ℥j of citric acid in f ℥xiv distilled water. If the flavour of lemon-juice be desired, a few drops of essential oil of lemons may be added.

Acidum formicum. *Formic acid.* $C^2HO^3 + HO$.

This acid exists in the insect called the *Ant* (Formica), from which it derives its name (see page 174), and it is also prepared artificially, as by the following process:—

℞ Sugar . . . . . 1 part.
Peroxide of manganese . . 3 ,,
Water . . . . . 2 ,,
Mix in a large retort, and add
Oil of vitriol, 3 parts, mixed with
Water . . 3 ,,

When the first violent effervescence has subsided, heat is cautiously applied, and an acid liquor (impure formic acid) distilled over. This may be purified by forming with it an insoluble formiate of lead, and decomposing this with sulphuretted hydrogen. It is usually used much diluted with water.

Acidum gallicum. *Gallic acid.* $C^7H^3O^5, HO$.

When pure, is a colourless crystallizable acid, having an acidulous and styptic taste. It is soluble in 3 parts of boiling water, and in 100 parts of cold water.

Lond. Ph. 1851.

Acidum gallicum. Gallic acid.

An acid prepared from the gall. The crystals destitute of colour, it dissipates in the fire. It is dissolved in water and in rectified spirit. It affects the preparations of the sesquioxide of iron dissolved in water, with a bluish-black colour; but throws down nothing from a solution of isinglass.

Dubl. Ph. 1850.

℞ Of galls, in coarse powder ℔j. (D)
Distilled water as much as
may be necessary.

Having placed the galls in a porcelain dish, pour on as much water as will convert them into a thick paste, and keep them in this moistened condition for six weeks, at a temperature between 60° and 70°, adding water from time to time, so as to supply what is lost by evaporation. Let the residue be boiled for 20 minutes, with 45 ounces of water, and then placed on a calico filter. The filtered solution, on cooling, will afford a copious precipitate. Let this be drained on a calico filter, then subjected to strong expression, after having been first enveloped in blotting paper, and again dissolved in 10 ounces of boiling water. When, upon ceasing to apply heat, the solution has cooled down to 80°, pour it off from the crystals which have formed, and having washed these with 3 ounces of ice-cold water, dry them, first on blotting paper, and finally by a steam or water heat.

By boiling the undissolved portion of the galls with 45 additional ounces of water, filtering into a capsule containing the liquor decanted from the crystals formed in the preceding process, evaporating down to the bulk of 10 ounces, and cooling to 80°, an additional quantity of the crystallized acid will be obtained.

Or,

℞ Powdered galls. . . . . ℔j.(D)
Oil of vitriol of commerce . f ℥xxvj.
Water . . . . . Ov f ℥xiv.

Steep the galls for 24 hours in Oj of the water, then transfer them to a glass or porcelain percolator, and pour on Oiss of the water in successive portions. Dilute 5 ounces of the oil of vitriol, with an equal bulk of water, and when the mixture has cooled, add it to the infusion obtained by percolation, stirring well, so as to bring them into perfect contact. Let the viscid precipitate which forms, be separated by a filter, and to the solution which passes

through, add ℥v. more of the oil of vitriol, which will yield an additional precipitate. This being added to that previously obtained, let both be enveloped in calico, and subjected to powerful pressure. Dissolve the residue in the rest of the oil of vitriol, this latter being first diluted with what remains of the water; boil the solution for 20 minutes, and then allow it to cool, and set it by for a week. Let the deposit which has formed at the end of this period be pressed, dried, and then dissolved in 3 times its weight of boiling water, clearing the solution, if necessary, by filtration; and when it has cooled down to 80°, decant the liquid from the crystalline sediment which has formed, and wash the latter with 3 ounces of ice-cold water. Finally let it be transferred to blotting paper, and when deprived by this of adhering liquid, let it be dried perfectly at a temperature not exceeding 212°.

The gallic acid obtained by either the preceding processes may be rendered nearly white by dissolving it in 20 times its weight of boiling distilled water, and causing the solution to traverse a stratum of prepared animal charcoal spread upon a calico filter. When the liquid passes through colourless, it should be evaporated to one-sixth of its volume and then suffered to cool, in order to the separation of the crystallized acid.]

Gallic acid has been given in doses of from 15 grains to 30 grains against the *Tænia solium*. It is sometimes used externally as a styptic.

Acidum hydriodicum. *Hydriodic acid.* HI.

Consists of iodine and hydrogen. HI. Under ordinary circumstances it exists as a gas; but the solution of this in water is the form in which it is usually employed.

Solution of hydriodic acid.

1. Reduce ℥j. of iodine to powder, by rubbing it, moistened with a little water, in a Wedgwood mortar; mix this with ℥vj. of distilled water in any convenient vessel, and pass sulphuretted hydrogen gas into the mixture, until the colour of the iodine is entirely removed; boil the liquor so as to drive off excess of sulphuretted hydrogen, and remove the sulphur which will be present, by passing the fluid through a filter. The filtered liquor (solution of hydriodic acid) should be colourless and free from smell.

2. To 126 grains of iodine, mixed with about one fluid ounce of distilled water, add 35 grains of zinc turnings or clippings. Apply a gentle heat, care being taken that the mixture is not exposed to atmospheric air more than is absolutely necessary, and when the action has ceased, and no free iodine is present, decant the clear liquor, and wash, dry, and weigh the residual zinc. The solution and washings are now to be evaporated, and for every atom or 32 grains of zinc found to have been dissolved, add one atom or 63 grains of crystallized oxalic acid. Apply a gentle heat to the mixture, and, when cold, separate the precipitated oxalate of zinc by filtration.

Note.—It cannot be kept for any length of time without undergoing decomposition.

Acidum hydrochloricum. *Hydrochloric acid. Muriatic acid.* H Cl.

Under ordinary circumstances a gas; but the above names are generally given to the solution of hydrochloric acid gas in water.

Lond. Ph. 1851.

Acidum hydrochloricum. *Hydrochloric acid.*

An acid prepared from chloride of sodium. Destitute of colour; specific gravity 1·16; exposed to the air it evolves very sharp white vapours; the whole goes off into vapours by heat. Mixed with water, it throws down nothing, on either chloride of barium, ammonia, or sesquicarbonate of ammonia, being added. It exercises no action upon strips of gold when it is boiled with them, nor does it throw down anything if protochloride of tin be afterwards added.

It does not abstract the colour from a solution of sulphate of indigo. 100 grains of this acid are saturated by 132 grains of the crystals of carbonate of soda.

Edin. Ph. 1841. *Acidum muriaticum.*

Hydrochloric acid of commerce. Density at least 1·180. It is always yellow, and commonly contains a little sulphuric acid, oxide of iron, and chlorine.

Edin. Ph. 1841. *Acidum muriaticum purum.*

Purify muriate of soda by dissolving it in boiling water, concentrating the solution, skimming off the crystals as they form on the surface, draining from them the adhering solution as much as possible, and subsequently washing them with cold water slightly. Take of this salt, previously well-dried, of pure sulphuric acid, and of water, equal weights. Put the salt into a glass retort, and add the acid previously diluted with a third part of the water and allowed to cool. Fit on a receiver containing the rest of the water. Distil with a gentle heat by means of a sand-bath or naked gas-flame, so long as any liquid passes over, preserving the receiver constantly cool by snow or a stream of cold water.

Note.—Density 1·170; nearly or entirely colourless: without action on gold-leaf. If previously diluted with distilled water, it is not altered by solution of nitrate of baryta.

Dubl. Ph. 1850.

Acidum muriaticum purum.

℞ Dried chloride of sodium . . ℔iij. (D)
Oil of vitriol of commerce . f ℥xliv.
Water . . . . . f ℥xxxij.
Distilled water . . . . f ℥xliv.

Dilute the oil of vitriol with the 32 ounces of water, and when the mixture has cooled, pour it upon the salt, previously introduced into a globular flask, having a capacity of at least one gallon. A gentle heat being now applied, let the muriatic gas, as it escapes, be conducted into a bottle containing the distilled water, by means of a bent tube dipping about half an inch beneath its surface, and let the process be continued until the product measures 3 pints. Throughout this operation, particularly towards its close, the temperature of the water which absorbs the gas must, by the application of external cold, be prevented from rising.

The specific gravity of this acid is 1·176.

Synonymes.

Spiritus Salis. Lond. Ph. 1721. *Spirit of Salt.*

Spiritus Salis Marini Glauberi. Lond. Ph. 1746.

Acidum Muriaticum. Lond. Ph. 1788, 1809, and 1824.

Acidum hydrochloricum dilutum. *Diluted Hydrochloric acid.*

Lond. Ph. 1851. *Acidum hydrochloricum dilutum.*

℞ Hydrochloric acid . . . f ℥v.
Distilled water . . . . f ℥xv.
Mix.

Its specific gravity is 1·043. A fluid ounce of this acid is saturated by 168 grains of the crystals of carbonate of soda.

Edin. Ph. 1841. *Acidum muriaticum dilutum.*

℞ Muriatic acid . . . . . f ℥iv.
Distilled water . . . . f ℥xij.
Mix them together. The density of this preparation is 1·050.

Dubl. Ph. 1850. *Acidum muriaticum dilutum.*

℞ Pure muriatic acid . . . f ℥iv.
Distilled water . . . . f ℥xiij.
Mix.

The specific gravity of this acid is 1·045.

Acidum hydrocyanicum. *Hydrocyanic acid. Prussic acid. Acidum borussicum.*

This acid was first obtained in a free state in the year 1782, by Scheele, who prepared it from Prussian blue. It exists

ready formed in, or may be obtained as a product from, many vegetables, especially those belonging to the sub-orders *Amygdaleæ* and *Pomeæ*. Its proximate constituents are cyanogen and hydrogen, but its ultimate composition is C^2NH. Pure anhydrous hydrocyanic acid is a solid at the temperature of 0° F.; it becomes liquid at a temperature a little above this; and boils at 79° or 80° F., forming hydrocyanic acid vapour. The solution of this in water forms the diluted hydrocyanic acid which is employed in medicine.

Acidum hydrocyanicum dilutum. *Diluted Hydrocyanic acid.*

Lond. Ph. 1851.

℞ Ferrocyanide of potassium . ℥ij.
Sulphuric acid . . . . . f ℥vij.
Distilled water . . . . . Oiss.

Mix the acid with 4 fluidounces of the water, and to these, put into a retort when they have cooled, add the ferro-cyanide, previously dissolved in half a pint of the water. Pour 8 fluidounces of the water into a cooled receiver: then, the retort being fitted on, let 6 fluidounces of the acid, distilled by a gentle heat in a sand-bath, pass into this water. Lastly, add 6 other ounces of water, or as much as may be sufficient, that 12·59 grains of nitrate of silver dissolved in distilled water may be accurately saturated by 100 grains of this acid.

Destitute of colour; it goes off into vapours by heat, evolving a peculiar odour. It affects litmus with a slight fugacious red colour. It does not redden the iodocyanide of potassium and mercury. Hydrosulphuric acid being added it is not coloured. Chloride of barium being added, it throws down nothing. Two grains of hydrocyanic acid are contained in 100 grains of this dilute acid.

Edin. Ph. 1841. *Acidum hydrocyanicum. Hydrocyanic acid.*

℞. Ferrocyanide of potassium . ℥iij.
Sulphuric acid . . . . f ℥ij.
Water . . . . . f ℥xvj.

Dissolve the salt in 11 fluidounces of the water, and put the solution into a matrass with a little sand; add the acid previously diluted with 5 fluidounces of the water and allowed to cool: connect the matrass with a proper refrigeratory; distil with a gentle heat, by means of a sand-bath or naked gas-flame, till 14 fluidounces pass over, or till the residuum begins to froth up. Dilute the product with distilled water, till it measures 16 fluidounces.

Note.—Solution of nitrate of baryta occasions no precipitate. 50 minims diluted with 1 fluidounce of distilled water, agitated with 390 minims of solution of nitrate of silver, and allowed to settle, will again give a precipitate with 40 minims more of the test: but a further addition of the test after agitation and rest has no effect. The precipitate entirely disappears in boiling nitric acid.

Dubl. Ph. 1850.

℞ Ferrocyanide of potassium ℥ij. (D)
Oil of vitriol of commerce . f ℥j.
Water . . . . . f ℥xij.

Dissolve the salt in 8 ounces of the water, and dilute the oil of vitriol with the remaining 4 ounces. When both solutions are cold, introduce them successively into a retort or matrass, containing several slips of platinum foil, and connected in the usual manner with a Liebig's condenser; and, with the aid of a gentle heat, let 8 ounces be distilled over. Finally, dilute the product with 8 ounces of distilled water, or so that the volume of the diluted acid shall be 16 fluidounces. The specific gravity of this acid is ·997.

Scheele's Prussic acid.

Mix together 10 parts of Prussian blue in powder, 5 parts of red oxide of mercury, and 30 parts of water; boil the mixture in a glass vessel for some minutes, or until the blue colour has disappeared; pass the fluid through a filter, and afterwards wash the filter with 10 parts more of hot water. To the clear liquors add 2½ parts of clean iron-filings, quite free

from rust, and 1 part of strong oil of vitriol; shake the mixture, and pour the clear solution from the mercury which separates at the bottom. Put the solution into a retort, and distil over one-fourth part of it, which keep for use.—*Thompson's System of Chemistry.*

The foregoing processes for preparing *diluted hydrocyanic acid* afford products differing materially from each other in strength. Scheele's hydrocyanic acid was for some time generally employed in this country, but the process for its preparation is objectionable, as the acid obtained by it is of uncertain strength, depending on the quality of the Prussian blue. Mr. Everett found specimens of Scheele's hydrocyanic acid, obtained from different houses in London, to contain, in one case, 5·8 per cent. of real acid; in others, 2·1 to 2·6 per cent.; and in several instances only 1·4 per cent. The strength of this acid has been generally estimated at 5 per cent. of real acid. The *diluted hydrocyanic acid*, Lond. Ph. 1851, contains 2 per cent. of real acid; the *hydrocyanic acid*, Edin. Ph. 1841, contains 3·226 per cent; the *Prussic acid*, Dubl. Ph. 1850, contains about 2 per cent. of real acid.

Acidum iodicum. *Iodic acid.*

IO^5.

A white solid, having a strong, astringent, sour taste, but no smell. Its specific gravity is greater than that of oil of vitriol. It is decomposed by a heat above 500° F.—*Preparation.* Introduce nitric acid, specific gravity 1·5, into a tube about fifteeen inches long, sealed at one end; add a fifth part of iodine, and keep the mixture at a boiling temperature for several hours, renewing the nitric acid, as it is lost by evaporation, and returning the iodine, which rises and condenses on the sides of the tube, to the liquid, by agitation, or by means of a glass rod. When the iodine has entirely disappeared, the nitric acid is to be driven off by evaporation at a temperature below 500° F., and the iodic acid will remain in the tube. (*Mr. Connell, of Edinburgh.*) This process answers very well for the preparation of a few grains of iodic acid, but when a larger quantity is required, it is more conveniently and economically made by boiling iodate of barytes with one-fourth of its weight of oil of vitriol, and $1\frac{1}{2}$ times its weight of water, when sulphate of barytes is formed, which may be separated by the filter, and the liquor, on being carefully evaporated to dryness, yields iodic acid.

The following process has been given by Mr. Lewis Thompson:—Put one atom or 126 grains of iodine into a proper vessel, with 24 ounces of water, and pass chlorine, previously washed in cold water, through the mixture, until it shall have become colourless; set the solution aside for an hour, then heat it to 212° F., to disengage the uncombined chlorine, and add $2\frac{1}{2}$ atoms or 295 grains of recently-precipitated oxide of silver; boil the whole for ten minutes; filter and evaporate carefully to dryness. The product is pure anhydrous iodic acid.

Morphia is said to be the only vegetable alkali which decomposes iodic acid and liberates iodine, on which account iodic acid has been recommended as a test for morphia.

Acidum lacticum. *Lactic acid.*

$C^6 H^5 O^5$, HO.

This acid exists in several of the animal secretions, especially in the urine. It is a product of the spontaneous fermentation of whey, of the viscous fermentation of rice-water, and of the juice of the beet-root.

The following is the best process for obtaining lactic acid:—Dissolve 14 parts of cane sugar in 60 parts of water, and add 4 parts of moist cheese and about 12 parts of chalk. Let the mixture stand in an open vessel, at a temperature between 77° and 87° F., for several weeks, or until it becomes quite thick with crystals of lactate of lime. These must now be separated, for if the fermentation be allowed to continue, and especially at a temperature above 87°, the product will

contain *butyric* and not *lactic* acid. If the above conditions be observed, about 13 parts of lactate of lime will be obtained, which is purified as follows:—The mixture is put into a dish and heated to boiling, which coagulates the caseine, and dissolves the lactate of lime; it is now strained through linen, and, as it cools, the lactate of lime crystallizes. This may be further purified by a second crystallization. The crystals of lactate of lime are dissolved in boiling water, and solution of oxalic acid added as long as a precipitate of oxalate of lime is formed. The solution will contain the lactic acid, which is to be concentrated by evaporation.

Hydrated lactic acid is a colourless, syrupy liquid, the specific gravity of which is 1·215. It has a very strong acid taste, which is remarkably weakened by dilution with water.

Acidum nitricum. *Nitric acid.* $N O^5$.

Anhydrous nitric acid was first obtained by M. Deville, by treating perfectly dry nitrate of silver with perfectly dry chlorine, and condensing the liberated acid vapour by a freezing mixture. It forms transparent colourless crystals of great brilliancy, which melt at a temperature a little above 85° F., and boil at above 113° F.

Lond. Ph. 1851. *Acidum nitricum. Nitric acid.*

An acid prepared from nitrate of potash. Destitute of colour; specific gravity 1·42; exposed to the air it evolves very sharp vapours; the whole goes off into vapours by heat. Diluted with 3 times its measure of water, it throws down nothing either from nitrate of silver, or chloride of barium. 100 grains of this acid are saturated by 161 grains of the crystals of carbonate of soda.

Edin. Ph. 1841. *Acidum nitricum.* Nitric acid of commerce.

Note.—Density 1380 to 1390; colourless, or nearly so; if diluted with distilled water, it precipitates but slightly, or not at all, with solution of nitrate of baryta, or of nitrate of silver.

Edin. Ph. 1841. *Acidum nitricum purum.*

Purify nitrate of potash (if necessary) by two or more crystallizations till nitrate of silver does not act on its solution in distilled water. Put into a glass retort equal weights of this purified nitrate and of sulphuric acid; and distil into a cool receiver with a moderate heat from a sand-bath or naked gas-flame so long as the fused material continues to give off vapour. The pale-yellow acid thus obtained may be rendered colourless (should this be thought necessary) by heating it gently in a retort.

Note.—Density 1500; colourless or pale yellow; unaffected by solution of nitrate of silver or nitrate of baryta, if previously diluted with distilled water.

Dubl. Ph. 1850. *Acidum nitricum purum.* (*Acidum nitricum.*)

℞ Nitrate of potash . . ℔ij. (D)
Nitrate of silver ℥ij (D); or as much as may be necessary;
Boiling distilled water . . Ov.
Oil of vitriol of commerce f℥xvij.

Dissolve the nitrate of silver in 2 ounces, and the nitrate of potash in the remainder of the water, and add by degrees the former solution to the latter, until a precipitate ceases to form. Pass now through a calico filter, and having evaporated to perfect dryness the clear liquor thus obtained, introduce the residuum into a retort, whose neck is made to pass at least 5 inches into the glass tube of a Liebig's condenser; then pour upon it the oil of vitriol, and with a heat which, towards the close of the process, must be raised so as to liquify the contents of the retort, cause the nitric acid to distil over.

The specific gravity of this acid is 1·500.

Synonymes.

Aqua fortis simplex and *aqua fortis duplex.* Lond. Ph. 1721.

Spiritus nitri glauberi. Lond. Ph. 1746.

Acidum nitrosum. Lond. Ph. 1788.

Aqua fortis. Aqua fortis duplex. Double aqua fortis.

A weak nitric acid, containing a portion of nitrous acid. It was originally obtained by distilling a mixture of nitre and copperas. It is used in the arts, by engravers, &c. Its sp. gr. is generally about 1·220.

Aqua fortis simplex. Single aqua fortis.

The same as the preceding, only weaker, being diluted with water.

Acidum nitricum dilutum. *Dilute nitric acid.*

Lond. Ph. 1851.

℞ Nitric acid . . . . f ℥iij.
Distilled water . . . f ℥xvij.
Mix.

Its specific gravity is 1·082. A fluidounce of this acid is saturated by 154 grains of the crystals of carbonate of soda.

Edin. Ph. 1841.

Mix together one fluidounce of pure nitric acid (D. 1500), and 9 fluidounces of distilled water. If the commercial nitric acid of D. 1390 be used, 1 fluidounce and 5½ fluid drachms are required. The density of this diluted acid is 1·077.

Dubl. Ph. 1850.

℞ Pure nitric acid . . . f ℥iv.
Distilled water . . . f ℥xxix.
Mix.

The specific gravity of this acid is 1·092.

Acidum nitro-muriaticum. *Nitro-muriatic acid. Aqua regia.*

Dubl. Ph. 1850. *Acidum nitro-muriaticum.*

℞ Pure nitric acid . . . fʒj,
Pure muriatic acid . . . fʒij.
Mix in a green glass bottle, furnished with an accurately-ground stopper, and keep in a cool place.

Remarks.—On mixing the acids as above, although they may have been previously colourless, the mixture becomes of a deep yellow, and exhales a strong smell of chlorine and of nitrous acid. The name *Aqua regia* is derived from its power of dissolving gold, the ancient *Rex metallorum*.

Acidum nitrosum. *Nitrous acid.*

In chemical language, the term *nitrous acid* is generally understood to refer to the compound NO^4, which contains 1 equivalent of oxygen less than nitric acid. Some chemists, however, as Graham, apply the term *nitrous acid* to the compound NO^3. Both these compounds are gaseous under ordinary circumstances, and in this state are of an orange-red colour. They may both be condensed into the liquid form by cold or pressure, and in this state the former is orange-red and the latter green. In commerce, '*Nitrous acid*' is understood to designate a fuming liquid nitric acid, which is coloured orange-red by the presence of *nitrous acid*.

Acidum oxalicum. *Oxalic acid. Acid of sugar.* C^2O^3, 3H O.

This acid was discovered by Scheele. It exists in many vegetables, in combination with potash, as in *Oxalis acetosella*, *Rumex acetosa*, &c., or in combination with lime, as in rhubarb, and other plants of that family. It may be, and is occasionally obtained, for commercial purposes, from some of these sources; but generally, and in this country always, it is made by acting on saccharine or amylaceous substances with nitric acid. Oxalic acid consists of C^2O^3, but, as thus composed, it exists only in combination; combined with 3 equivalents of water it forms the crystallized oxalic acid of commerce. *Preparation.*—To a mixture of 5 parts of nitric acid, specific gravity 1·42, and 10 parts of water, contained in an earthen vessel, add 1 part of sugar or starch; apply the heat of a water-bath until nitrous vapours cease to be evolved, then evaporate a portion of the liquid, and the oxalic acid will crystallize from the remainder on cooling. The mother-liquor may be used with fresh ingredients in the next operation.

The crystals of oxalic acid resemble those of Epsom salts in appearance, and on this account have often been taken in mistake for the latter with fatal consequences. Oxalic acid, when taken into the stomach, or introduced into the circulation, acts as a powerful poison. Chalk or magnesia suspended in water is the best antidote. It is rarely, if at all, used medicinally. Its principal employment is for discharging certain colours in calico-printing; it is also used for removing ink and other stains from linen, &c., and for whitening boot-tops.

Acidum phosphoricum. *Phosphoric.* PO^5.

Phosphoric acid may be obtained in various ways; first, by setting fire to phosphorus on a capsule, placed in the centre of a large stone-ware plate, and by covering this instanter by a large bell-jar. The phosphorus is thus converted into white flakes of phosphoric acid, which fall upon the plate like snow. The dry phosphoric acid, when exposed for a few minutes to the air, deliquesces. The anhydrous acid is perfectly fixed, unless in the presence of aqueous vapour, when it sublimes away. Phosphoric acid may be obtained, in combination with water, by acting on phosphorus with nitric acid. This is the method adopted by the London College. The same acid may also be obtained in large quantity from calcined bones by means of diluted sulphuric acid. Phosphoric acid is remarkable for possessing the property of forming three different salts of water, or three phosphates of water which are all soluble without change, and exhibit quite different properties.

Acidum phosphoricum dilutum. *Dilute Phosphoric acid.*

Lond. Ph. 1851.

℞ Phosphorus	℥vj.
Nitric acid	f ℥iv.
Distilled water	f ℥viij.

Add the phosphorus to the acid mixed with the water, and placed in a retort, into a sand-bath; then apply heat until 6 fluidounces shall have distilled. These are to be afterwards returned into the retort, that 6 fluidounces may again distil, which are to be rejected. Evaporate the remaining liquor in a capsule made of platinum, until 2 ounces remain of the whole. Lastly, add as much as may be sufficient, of distilled water, to the acid, when it shall have cooled, so that it may accurately fill a pint measure, and mix.

Destitute of colour and odour; specific gravity 1·064. It throws down nothing, either chloride of barium or nitrate of silver being added. It affects strips of copper or silver in no way; nor is it coloured by hydrosulphuric acid being put in either previously or afterwards. A fluidounce of this acid is saturated by 132 grains of the crystals of carbonate of soda, and nothing is thrown down from them.

Med. Uses.—Tonic. It is also found useful to correct a tendency to abnormal depositions of phosphate of lime, as in cases of exostosis, as also in some forms of urinary concretions. It has been found useful in forming an acidulated drink, which assuages the thirst so common in diabetes more effectually than any other.

Dose, ♏xx to f ℥i.

Acidum phosphoricum hydratum. *Hydrated Phosphoric acid. Glacial Phosphoric acid.*

Add a slight excess of carbonate of ammonia to the acid phosphate of lime obtained by the action of sulphuric acid on bone-earth; separate by means of a filter the insoluble lime-salt, and evaporate the solution, which will contain phosphate and sulphate of ammonia. This salt is afterwards to be exposed to a red heat in a platinum crucible, when the *hydrated phosphoric acid* alone will remain unvolatilized.

Acidum pyrogallicum. *Pyrogallic acid.* $C^6H^3O^3$.

This acid, which is extensively used in photography, is produced by exposing gallic acid to a heat of 410° Fahr. At a temperature

of 450° Fahr., it sublimes in the form of white shining scales, in which state it is usually met with in commerce.

Acidum pyroligneum. *Pyroligneous acid.*

Diluted acetic acid obtained by the destructive distillation of wood.

Edin. Ph. 1841. *Note.*—Density at least 1·034; nearly or entirely colourless; unaffected by sulphuretted hydrogen, or solution of nitrate of baryta; 100 minims neutralize at least 53 grains of carbonate of soda.

Acidum succinicum. *Succinic acid. Sal succini.* $C^4H^2O^3$, HO.

This acid is said to exist in the resin of some of the *Coniferæ*. It is produced together with suberic acid, by oxidizing margaric or stearic acid with nitric acid. The method, however, by which it is usually procured, is by submitting amber to distillation, when *succinic acid, oil of amber*, and an *acid liquor*, are obtained.

Dubl. Ph. 1826.

Take of amber reduced to coarse powder, pure sand, of each 1 part. On the application of heat gradually increased, an acid liquor, oil, and the acid in the crystallized form, will distil over. The latter should be received on bibulous paper, and exposed to strong pressure, to expel the oil, and again sublimed.

Remarks.—The crystals of succinic acid are in the form of scales or prisms. They have a slightly-acid taste, and when pure are without smell. They dissolve in 2 parts of boiling and 5 parts of cold water.

Succinic acid has been administered in doses of from grs. v to grs. xv, as a stimulant and anti-spasmodic. Its chief use now is, in combination with ammonia, *succinate of ammonia*, as a test for the persalts of iron.

Acidum sulphuricum. *Sulphuric acid. Oil of vitriol. Vitriolic acid.*

The term *sulphuric acid* is sometimes applied to the compound $S\,O^3$, which, at a temperature of about 68° F., is a tenacious solid, having somewhat the appearance of asbestos. It is liquid at 77°, and enters into ebullition at a heat a little above that. This, however, is generally distinguished as *dry* or *anhydrous sulphuric acid*. In this state it does not redden litmus paper. The term *oil of vitriol* applies only to the liquid sulphuric acid containing about 1 equivalent of water. This is the state in which alone it is met with in commerce, and to which the names above given are generally applied indiscriminately.

Oil of vitriol was first obtained by the distillation of green copperas or sulphate of iron, and this method is still adopted at Nordhausen in Saxony. When the copperas is previously well dried, a very strong acid, containing less than 1 equivalent of water, is obtained by this process, and this is distinguished in commerce as *Nordhausen oil of vitriol*.

An old but very unprolific method of making oil of vitriol was, to burn sulphur under a glass bell previously moistened inside with water, to collect this moisture, to expose it for some time to the air, then to boil it in a retort until white vapours cease to rise, when the liquid remaining in the retort will consist of sulphuric acid and water. The acid obtained in this way was called *oil of vitriol by the bell*.

The method now generally adopted of making *oil of vitriol* is, to burn either sulphur or iron pyrites, (native sulphuret of iron,) in a furnace adapted for the purpose, with access of air, and to conduct the vapour (sulphurous acid) which is given off into a large chamber lined with lead, into which are also introduced nitrous acid gas, vapour of water, and atmospheric air. The bottom of the chamber is also covered with water. The sulphurous acid ($S\,O^2$) is converted into sulphuric acid, ($S\,O^3$,) at the expense of a portion of the oxygen of the nitrous acid, ($N\,O^4$,) which last is thus converted into hyponitrous acid ($N\,O^3$). The sulphuric acid, ($S\,O^3$,) and hyponitrous acid, ($N\,O^3$,) together with a portion of water, combine to form a crystalline substance

which, on coming in contact with the water at the bottom of the chamber, is decomposed into oil of vitriol, binoxide of nitrogen, and nitrous acid gas. The binoxide of nitrogen is converted into nitrous acid by a portion of the oxygen of the atmospheric air present in the chamber, and then serves to oxidize a fresh portion of sulphurous acid. The sulphuric acid thus formed is accumulated in the water at the bottom of the chamber, until this acquires a specific gravity of 1·5 or 1·6, when it is removed for concentration, first into leaden vessels, and afterwards into vessels made of platinum.

Lond. Ph. 1851. *Acidum sulphuricum. Acidum e sulphure præparatum.*

An acid prepared from sulphur. Destitute of colour and odour; the specific gravity is 1·843. Mixed with an equal part of water, it throws down a white substance, but for the most part but little; it evolves no vapour of nitrous acid. Diluted with 12 parts of water, it throws down nothing yellow on hydrosulphuric acid being put in. 100 grains of this acid are saturated by 285 grains of the crystals of carbonate of soda.

Edin. Ph. 1841. *Acidum sulphuricum. Sulphuric acid of commerce.*

Density 1·840, or near it. Colourless. When diluted with its own volume of water only a scanty muddiness arises, and no orange fumes escape. When diluted with 12 volumes of water, sulphuretted hydrogen causes a white muddiness, but not a yellow precipitate.

Acidum sulphuricum purum. *Pure Sulphuric acid.*

Edin. Ph. 1841.

If commercial sulphuric acid contains nitrous acid, heat 8 fluidounces of it with between 10 and 15 grains of sugar, at a temperature not quite sufficient to boil the acid, till the dark colour at first produced shall have nearly or altogether disappeared. This process removes nitrous acid. Other impurities may be removed by distillation, which on the small scale is easily managed by boiling the acid with a few platinum chips, in a glass retort, by means of a sand-bath, or gas flame, rejecting the first half-ounce.

Note.—Density 1·845. Colourless. Dilution causes no muddiness. Solution of sulphate of iron shows no reddening at the line of contact when poured over it.

Dubl. Ph. 1850.

Take of oil of vitriol of commerce, any convenient quantity.

Introduce it into a small plain retort, containing a few slips of platinum foil, and passing the beak of the retort into a florence flask, which is to be used as a receiver; with the aid of a small charcoal fire or gas-lamp, distil over one-tenth of the acid. This being rejected, and a fresh receiver of the same kind connected with the retort, let the distillation be resumed, and continued until no more than about an ounce of liquid remains behind. The distilled product should now be transferred to, and preserved in, a well-stopped bottle.

The specific gravity of this acid is 1·846.

Acidum sulphuricum dilutum. *Diluted Sulphuric acid.*

Lond. Ph. 1851.

℞ Sulphuric acid . . . . f℥xv.
Distilled water . . . . Oj.

Gradually add the acid to Oss of the water, afterwards pour in as much of the remaining water as may be sufficient to exactly fill a pint measure, and mix.

Its specific gravity is 1·103. A fluidounce of this acid is saturated by 216 grains of crystals of carbonate of soda.

Edin. Ph. 1841.

Mix together f℥j of sulphuric acid and f℥xiij of water. The density of this preparation is about 1·090.

Dubl. Ph. 1850.

℞ Pure sulphuric acid . . . f ℥j.
Distilled water . . . . f ℥xiij.

Mix.

The specific gravity of this acid is 1·084.

SYNONYMES.

Spiritus Vitrioli tenuis. Lond. Ph. 1746.

Acidum Vitriolicum dilutum. Lond. Ph. 1788.

ACIDUM SULPHURICUM AROMATICUM. *Aromatic Sulphuric acid. Elixir of vitriol.*

Edin. Ph. 1841.

℞ Sulphuric acid (commercial)	f℥iijss.
Rectified spirit	Ojss.
Cinnamon, in moderately fine powder	℥jss.
Ginger, in moderately fine powder	℥j.

Add the acid gradually to the spirit; let the mixture digest at a very gentle heat for three days in a closed vessel; mix the powders; moisten them with a little of the acid spirit. Let the mass rest for twelve hours, and then put it into a percolator and transmit the rest of the acid spirit. This preparation may also be made by digesting the powders for six days in the acid spirit, and then straining the liquor.

Dubl. Ph. 1850.

℞ Rectified spirit	Oiss.
Pure sulphuric acid . . .	f℥iiiss,
Ginger, bruised	℥j. (D)
Cinnamon, bruised . . .	℥iss. (D)

Upon the spirit, placed in a stoppered bottle, pour the acid gradually, and shake, so as to produce an uniform mixture. Then add the cinnamon and ginger, and macerate for a week, with occasional agitation. Lastly, filter through paper, and preserve in a well-stopped bottle.

The specific gravity of this preparation is ·974.

Lond. Ph. 1745. *Elixir vitrioli acidum. Acid elixir of vitriol.*

℞ Aromatic tincture* . . .	℔j.
Oil of vitriol	℥iv.

Mix gradually, and when the sediment has subsided filter through paper.

ACIDUM SULPHUROSUM. *Sulphurous acid.* SO^2.

Exists in the state of gas under ordinary circumstances, but assumes the liquid form at a few degrees above zero of Fahrenheit. Water at 60° Fahr. is capable of dissolving 37 times its volume of the gas.

Sulphurous acid is formed by the combustion of sulphur in atmospheric air. The best method of obtaining the solution of the gas in water is, to add ʒss. of pounded charcoal to f℥iv of oil of vitriol, in a retort, and to apply the heat of a lamp to the mixture; effervescence takes place from the liberation of sulphurous acid and carbonic acid gases; on conducting these by means of a bent tube into a bottle containing water, the former will be absorbed while the latter passes off.

ACIDUM TANNICUM. *Tannic acid. Tannin. Acidum Scytodephicum.* $C^{18} H^5 O^9$, 3 H O.

An organic acid, having a powerful astringent taste, existing in large quantity in oak-bark, in nutgalls, and in different parts of many other vegetables.

Dubl. Ph. 1850. *Acidum Tannicum.*

℞ Galls, in tolerably fine powder	℥viij. (D)
Sulphuric ether . . .	Oiij.
Distilled water . . .	f℥v.

Incorporate the water and ether by agitation, and pour the resulting solution in successive portions upon the galls, previously introduced into a glass or porcelain percolator. The liquid which accumulates in the lower bottle will consist of two distinct strata, the heavier of which is to be separated, and evaporated to dryness, finally applying an oven heat, which, however, should not exceed 212°.

From the lighter liquid the ether may be recovered by distilling it by means of a water-bath, and with the aid of a Liebig's condenser.

* *Aromatic tincture.* Lond. Ph. 1745. Take of cinnamon, ʒvj.; coriander seeds, ʒiij.: long pepper, ginger, of each ʒij.; proof spirit, ℔ij. Macerate without heat, and strain.

Lond. Ph. 1851. *Acidum Tannicum. Tannic acid. Acidum e gallâ comparatum.*

An acid produced from the gall nut.

Nearly destitute of colour; dissolved in water it is strongly astringent. It throws down a white precipitate from a solution of isinglass. It agrees with gallic acid as regards the other things noted above.

Acidum tartaricum. *Tartaric acid.*

Symb. of the crystallized acid $2\,H\,O + C^8\,H^4\,O^{10}$; or $C^4\,H^2\,O^5 + H\,O$. This acid, first prepared by Scheele, exists in many fruits, and also as tartrate of lime in several roots, but is prepared only from the juice of the grape, which contains tartaric acid in the form of tartar or bitartrate of potash. This last salt precipitates during the fermentation of wine; in the crude state it is known as *argol;* when purified, as cream of tartar.

Lond. Ph. 1851.

Acidum tartaricum. Tartaric acid. Acidum potassæ bitartrate præparatum. Crystalli.

An acid prepared from bitartrate of potash. The crystals.

Destitute of colour, the whole, or nearly the whole, is dissipated in the fire. It is dissolved by water. This solution throws down bitartrate of potash from any neutral salt of potash. Nothing is thrown down from the same solution by chloride of barium; that which is thrown down by acetate of lead, is dissolved by nitric acid. 100 grains of this acid dissolved in water are saturated by 192 grains of the crystals of carbonate of soda.

Edin. Ph. 1841.

℞ Bitartrate of potash . . . ℔ iv.
Boiling distilled water, cong. ijss.
Prepared chalk . . ℥xxv. and ʒvj.
Diluted sulphuric acid, Ox. and f ℥vii.
Muriatic acid, f ℥xxviss., or a sufficiency.

Boil the bitartrate with two gallons of the water, and add gradually half the chalk, constantly stirring. When the effervescence is over, add a solution obtained by dissolving the rest of the chalk in the muriatic acid, diluted with four pints of the water. After the tartrate of lime has subsided pour off the liquid, and wash the tartrate with distilled water till it is tasteless; then pour the diluted sulphuric acid on the tartrate and boil for fifteen minutes. Evaporate with a gentle heat to obtain crystals. Purify these by repeated solution, filtration, and crystallization.

Note.—Tartaric acid, when incinerated with the aid of the red oxide of mercury, leaves no residuum, or a mere trace only.

Med. Uses.—As a substitute for citric acid, in preparing what are called sodaic powders. *Dose*, the same as that of citric acid.

Acidum valerianicum. *Valerianic acid.* $C^{10}\,H^9\,O^3,\,H\,O$.

A volatile organic acid, obtained, together with essential oil, by distillation from valerian root; obtained also by heating oil of potato-spirit with a mixture of equal parts of fused potash and lime, or with chromic acid. When separated from water it has the appearance of a limpid oil, having a strong smell of valerian. Its specific gravity is 0·937. It boils at 370° Fahr. Soluble in all proportions in alcohol, ether, and oil of turpentine, and in 30 parts of water. The salts formed with valerianic acid have a sweet taste.

The following is a good process for its preparation:—

Mix 4 parts of bichromate of potash with 8 parts of water and 6 parts of oil of vitriol. Put this mixture into a capacious retort, and add, in small quantities at a time, 1 part of pure oil of potato-spirit, shaking the mixture from time to time, and plunging the retort into cold water to moderate the violence of the action. The mixture will acquire a deep-green colour. Distil this nearly to dryness; mix the distillate with excess of caustic potash, and after allowing it to stand for some

time, remove an oily liquid which will float on the surface. Evaporate the alkaline solution to a small bulk, and decompose this, which is valerianate of potash, with sulphuric acid in a retort, from which the valerianic acid is to be distilled.

Aconitina. *Aconitine.*

This is the active principle of several species of Aconite, in which plant it exists in combination with a vegetable acid. (Aconitic acid?) It ranks among the vegetable alkalies or alkaloids.

The following process, which is said to afford very satisfactory results, has been published by Dr. F. W. Headland:—

Boil two pounds of coarsely-bruised dry root of aconite (*Aconitum ferox* being preferred) with one gallon of rectified spirit, for an hour, in a retort with a receiver adapted to it. Pour off the tincture left in the retort from the solid matter, and add to the latter another gallon of spirit, together with the portion which had distilled from the first. Boil these as before, and then add the liquid left in the retort to that decanted from the previous decoction. To the residue of the root add a third gallon of spirit, together with the distillate from the previous operation, and proceed as before. Finally, press the root, mix the tinctures, and filter them. Distil off the spirit from the mixed tincture until the latter is reduced to the consistence of thin syrup. Mix this with twice its bulk of distilled water, and then add excess of sulphuric acid. Separate the precipitate by filtration and reject it. Evaporate the clear liquor to a syrupy consistence, and put this, which should not exceed two fluid-ounces, into a stoppered bottle, of which it shall occupy about one-third. Add an excess of strong solution of ammonia, and agitate the mixture. Add now a quantity equal in volume to the entire liquid of pure ether. Insert the stopper tightly, and, holding the bottle in a damp cloth, with a finger on the stopper, shake briskly for a few minutes; then allow a sufficient time to elapse for the ether to rise to the surface, and remove this carefully with a pipette or glass syringe, putting it into an open basin. Treat the watery solution with another and a third similar quantity of ether in the same way. Finally, let the ethereal solution evaporate spontaneously, when the aconitine will be deposited. It will have a transparent, vitreous appearance.

This process is said to yield from 50 to 90 grains of aconitine from a pound of the dry root of *aconitum ferox*.

Med. Uses.—It is sometimes used in neuralgic affections, in the form of an ointment, the proportion being 1 grain to 1 drachm of lard.

Adeps. *Adeps suillus. Axungia. Lard. Hog's lard.*

The fat of the hog, obtained principally from about the loins, and separated from the membranes in which it is contained by melting over a slow fire and straining through a cloth. When used in medicine it should have very little taste or smell, and be free from salt, which is sometimes added to preserve it from becoming rancid.

Lond. Ph. 1851.

That which has been prepared with chloride of sodium, is not to be used.

Dubl. Ph. 1850.

Take of lard of commerce any convenient quantity; melt it in twice its weight of boiling water, stirring the mixture constantly; then set the mixture aside to cool, and separate the lard when it has solidified.

Ærugo. *Verdigris.*

This is an impure subacetate of copper, the composition of which is not always precisely the same. On the continent it is generally obtained by covering plates of copper with the fermenting marc of grapes. In this country, and sometimes on the continent, acetic acid is applied directly to the copper plates. Some specimens of verdigris are distinctly green, others approach to a blue colour. The latter kind is a definite compound of 1 eq. acetic acid, 2

eq. oxide of copper, and 6 eq. water; the former kind is a mixture of sesqui and tribasic acetates with the preceding bibasic acetate.

Lond. Ph. 1851.

Partly soluble in water and almost totally so in diluted sulphuric acid with the assistance of heat; from this solution nothing is precipitated by ammonia added in excess.

Edin. Ph. 1841.

Ærugo. Commercial diacetate of copper. *Verdigris.* It is dissolved in a great measure by muriatic acid, not above 5 per cent. of impurity being left.

Dubl. Ph. 1850.

Take of sub-acetate of copper, a convenient quantity.

Reduce it to powder, by careful trituration in a porcelain mortar, and separate the finer parts for use by means of a sieve.

Ærugo crystallizata. *Cupri acetas. Crystallized verdigris. Distilled verdigris. Acetate of copper.*

This is a neutral acetate of copper, obtained by dissolving oxide of copper, or more frequently common verdigris, in acetic acid, and allowing the solution to crystallize. The salt consists of 1 eq. acetic acid, 1 eq. oxide of copper, and 1 eq. of water. It is perfectly soluble in water.

Æs ustum. *Saffron of copper.*

Cut metallic copper into small pieces and put it into a crucible with sulphur and common salt, *stratum super stratum*, then put the crucible into a strong fire, and when the sulphur is burnt away, the copper will be found to be of an iron colour without and reddish within. When powdered it should have a fine red colour. The above is the process adopted by the Hollanders, who succeed best in making it. (*Pomet.*)

Æther. *Æther sulphuricus. Ether. Sulphuric ether. Naphtha vitrioli.*

A light, volatile, highly inflammable liquid, the vapour of which is heavier than atmospheric air. Its composition is represented by the symbol $C^4 H^5 O$. One part of ether is soluble in 10 parts of water, and 1 part of water is soluble in 36 parts of ether. It combines in all proportions with alcohol.

Lond. Ph. 1851.

Destitute of colour; the specific gravity does not exceed ·750; exposed to the air it goes into vapours; it affects litmus, either not at all, or very slightly only, with a red colour. Half a pint of water is necessary for a fluidounce to entirely unite with it.

Edin. Ph. 1841. *Æther sulphuricus.*

℞ Rectified spirit . . . . f℥L.
Sulphuric acid . . . . f℥x.

Pour 12 fluidounces of the spirit gently over the acid contained in an open vessel, and then stir them together briskly and thoroughly. Transfer the mixture immediately into a glass matrass connected with a refrigeratory, and raise the heat quickly to about 280°. As soon as the ethereal fluid begins to distil over, supply fresh spirit through a tube into the matrass in a continuous stream, and in such quantity as to equal that of the fluid which distils over. This is best accomplished by connecting one end of the tube with a graduated vessel containing the spirit,—passing the other end through a cork fitted into the matrass,—and having a stop-cock on the tube, to regulate the discharge. When forty-two ounces have distilled over, and the whole spirit has been added, the process may be stopped. Agitate the impure ether with sixteen fluidounces of a saturated solution of muriate of lime, containing about half-an-ounce of lime recently slaked. When all odour of sulphurous acid has been thus removed, pour off the supernatant liquor, and distil it with

a very gentle heat so long as the liquid which passes over has a density not above ·735. More ether of the same strength is then to be obtained from the solution of muriate of lime. From the residuum of both distillations a weaker ether may be obtained in small quantity, which must be rectified by distilling it gently again.

Note.—Density ·735 or under; when agitated in a minim measure with half its volume of concentrated solution of muriate of lime, its volume is not lessened.

Dubl. Ph. 1851. *Æther sulphuricus.*

℞ Rectified spirit . . . . Oiij.
Oil of vitriol of commerce . f ℥viij.
Fresh-burned lime, in fine powder . . . . . ℥j. (D)

Mix the acid and 10 ounces of the spirit in a glass matrass, capable of holding a quart at least, and, without allowing the mixture to cool, connect the matrass with a Liebig's condenser, and applying a sufficient heat to maintain the liquid in brisk ebullition, commence the distillation. As it proceeds, admit gradually through a glass tube traversing the cork of the matrass, the remainder of the spirit, regulating its influx so that the boiling liquid shall maintain a constant level; and, when the entire of it has been introduced, continue the application of the heat until the contents of the matrass become black, and show a tendency to froth over. (The tube through which the spirit enters should dip by its lower extremity, where its diameter is contracted, at least ½ an inch beneath the surface of the liquid in the matrass; and the eduction pipe of the reservoir for the spirit, with which the exterior extremity of the glass tube is connected, should be furnished with a stop-cock, to regulate the descent of the spirit. This reservoir also should be placed at least 3 feet above the level of the boiling liquid.) The crude ether thus obtained is to be agitated with the pulverized quick-lime, and then rectified, the distillation being continued as long as the product, on being well shaken, continues to have a specific gravity lower than ·750. The resulting liquid should be preserved in a cool place in accurately-stopped bottles.

A fresh reservoir being attached to the further end of the condenser, and the distillation resumed, a product will be obtained which may be substituted for rectified spirit in a subsequent ether process.

Æther aceticus. *Acetic ether.*

Codex, Ph. Franç. 1839.

℞ Rectified spirit, (sp. gr. 0·840), 100 parts by weight;
Acetic acid, (sp. gr. 1·075,) 66 parts by weight;
Strong oil of vitriol, 20 parts by weight.

Mix together the spirit and acetic acid in a glass retort, and then add the oil of vitriol. Adapt a refrigerator and receiver, and distil 130 parts by the heat of a sand-bath. To the distilled liquor add a small quantity of carbonate of potash, shake them together, and after allowing them to remain in contact for some hours, distil off 100 parts, which keep for use.

Synonyme. *Naphtha aceti.*

Æther chloricus. *Chloric ether. Terchloride of carbon.*

These names have been applied to a solution of chloroform in rectified spirit of wine, in the proportion of 1 part of the former to 6 or 8 parts of the latter.

Æther hydrochloricus. *Æther muriaticus. Hydrochloric ether. Muriatic ether.*

This ether was made by Paracelsus and Basil Valentine. The following process, which was given by Thenard, answers very well:—[Introduce into a retort equal volumes of the strongest hydrochloric acid, and absolute alcohol; adapt the retort, by means of a tube bent at right angles, with a three-necked bottle half filled with water at a temperature of 68° Fahr. to 77° Fahr. To the middle neck of the

bottle a safety tube is attached, and to the third neck a bent tube communicating with an efficient condensing apparatus containing a freezing mixture. The apparatus being thus arranged, heat is to be gradually applied to the retort, when a mixture of ether and spirit will pass into the three necked bottle, from whence the ether alone will distil over.] Pure hydrochloric ether is a colourless liquid, having no action on test paper. It has a strong ethereal smell, and sweetish taste. Its sp. gr. is 0·874 at 41° Fahr. It enters into ebullition at about 51° Fahr. It is soluble in an equal volume of water; and in all proportions in alcohol. Its composition is $C^4 H^5 Cl$.

Spiritus salis dulcis of the Edin. Ph. 1722.

Is a mixture of hydrochloric ether and spirit. The following is the formula:—

℞ Hydrochloric acid, 1 part;
Rectified spirits, 3 parts.

Digest for several days, then distil from a retort, and repeat the distillation 3 or 4 times.

Æther nitrosus. *Nitrous ether. Hyponitrous ether.*

This is a combination of ether with the nitrous acid of Graham (hyponitrous acid of Turner and Kane). It is a pale yellow liquid, having a fragrant smell somewhat resembling that of apples. It boils at 62° Fahr. Sp. gr. 0·947 at 60° Fahr. It is soluble in 48 parts of water, and in all proportions in ether and alcohol.

Dubl. Ph. 1826. *Æther nitrosus. Nitrous ether.*

℞ Nitrate of potash, purified, dried, and coarsely powdered . . . . . ℔jss.
Sulphuric acid . . . . ℔j.
Rectified spirit, *by measure* ℥xix.

Put the nitrate of potash into a tubulated retort placed in a bath of cold water, and pour on it by degrees, and at intervals, the sulphuric acid and the spirit, previously mixed and cooled after their mixture. Without almost any external heat, or at most a very gentle one (as of warm water added to the bath), the ethereal liquor will begin to distil without the application of fire; in a short time the heat in the retort will increase spontaneously, and a considerable ebullition will take place, which must be moderated by reducing the temperature of the bath with cold water; the receiver must also be kept cold with water or snow, and furnished with a proper apparatus for transmitting the highly-elastic vapour (bursting from the mixture with great violence if the heat be too much increased) through a pound of rectified spirit contained in a cool phial.

The ethereal liquor thus spontaneously distilled, is to be received into a phial with a ground-glass stopper, and there must be added by degrees (closing the phial after each addition) as much very dry and powdered carbonate of potash as will suffice to saturate the excess of acid, using litmus as a test: this is effected by the addition of about a drachm of the salt; in a short time the nitrous ether will rise to the surface, and is to be separated by means of a funnel.

If the ether be required very pure, distil it again to one half, from a bath at a temperature of 140°. Its specific gravity is to that of distilled water as 900 to 1000.]

Nitrous ether is formed in the first part of the process of the Edin. Pharm. 1841 for Spiritus ætheris nitrici, which preparation consists of nitrous ether and spirits.

Spiritus ætheris nitrici. *Spirit of nitric ether. Sweet spirit of nitre.*

Lond. Ph. 1851.

℞ Rectified spirit . . . . . Oij.
Nitric acid . . . . . fʒiiiss.

Gradually add the acid to the spirit, and mix; then let 28 fluidounces distil.

The specific gravity of this is ·834. It slightly changes the colour of litums into red. Carbonate of soda being added no bubbles of carbonic acid are produced.

Edin. Ph. 1841.

℞ Rectified spirit . . Oij. and f ℥vi.
Pure nitric acid (D. 1500) . f ℥vij.

Put fifteen fluidounces of the spirit, with a little clean sand, into a two-pint matrass, fitted with a cork, through which are passed a safety-tube terminating an inch above the spirit, and another tube leading to a refrigeratory. The safety-tube being filled with pure nitric acid, add through it gradually three fluidounces and a half of the acid. When the ebullition which slowly rises is nearly over, add the rest of the acid gradually, half a fluidounce at a time, waiting till the ebullition caused by each portion is nearly over before adding more, and cooling the refrigeratory with a stream of water, iced in summer. The ether thus distilled over, being received in a bottle, is to be agitated first with a little milk of lime, till it ceases to redden litmus-paper, and then with half its volume of concentrated solution of muriate of lime. The pure hyponitrous ether thus obtained, which should have a density of 899, is then to be mixed with the remainder of the rectified spirit, or exactly four times its volume.

Spirit of nitric ether ought not to be kept long, as it always undergoes decomposition, and becomes at length strongly acid. Its density by this process is ·847.

Note.—It effervesces feebly, or not at all, with solution of bicarbonate of potash; when agitated with twice its volume of concentrated solution of muriate of lime, 12 per cent. of ether slowly separates.

Dubl. Ph. 1850. *Spiritus æthereus nitrosus.*

℞ Rectified spirit . . Oij. and f ℥viij.
Pure nitric acid . . . . f ℥iij.
Water . . . . . f ℥j.

Solution of ammonia, a sufficient quantity. Place 6 ounces of the spirit in a glass matrass capable of holding a quart, and connect this with a Liebig's condenser, whose further extremity is fitted loosely by a collar of tow into a thin 8-ounce phial. Add now the water to the nitric acid, and, having introduced half of the resulting solution into the matrass, through a safety syphon tube, close the mouth of this tube with a cork, and apply for a few moments a gentle heat, so as to cause a commencement of ebullition. When the action (which shortly after commencing, proceeds with much violence, and should be moderated by the external application of cold water) has relaxed, introduce gradually the remainder of the acid, so as to restore it. The action having entirely ceased, agitate the distilled product with half its bulk of the solution of ammonia, allow the mixture to rest for a few minutes, and having separated the supernatant ethereal liquid, mix 4 ounces of it with the rest of the spirit, and preserve the product in small, strong, and accurately-stopped bottles.

In the performance of the preceding distillation, the condenser should be fed with ice-cold water, and the phial, in which the liquid is received, should be surrounded with a mixture of 1 part salt and 2 of pounded ice; or, when ice cannot be procured, with a mixture of 8 parts of sulphate of soda in small crystals and 5 of commercial muriatic acid.]

Med. Uses.—Refrigerant, antispasmodic, and diuretic. Dose ♏x to ♏xl.

Synonyme. *Spiritus Nitri dulcis.* Lond. Ph. 1746.

Ether Phosphoratus. *Phosphorated Ether.*

Ph. Hannov. Nova, 1831.

℞ Phosphorus . . . . . gr. xvj.
Rectified spirit . . . . ℥ss.

Put them into a ℥iij bottle, heat the bottle by immersing it in warm water, so as to melt the phosphorus, then shake them together until cold, when the phosphorus will be obtained in a state of minute division. The spirit is now poured off, and ℥ij of ether added; these are macerated for four days, and the liquid is then separated by filtration, and kept in a cold, dark place.

Æther terebinthinatus. *Terebinthinated Ether.*

Cadet de Gassicourt.

℞ Alcohol . . . . . ℔ij.
Spirit of Turpentine . . . . ℔ss.
Mix, and add gradually,
Concentrated nitric acid . . . ℔ij.
Distil one half of the mixture at a gentle heat.

Med. Uses.—This is employed externally and internally in cases of biliary calculi, jaundice, engorgements of the liver, and rheumatism. *Dose*, from 20 to 40 drops, in honey or yolk of egg.

ÆTHIOPS ANTIMONIALIS. *Antimonial ethiops.*

James's Dispensatory, 1764.

Fuse together equal weights of black antimony and sea salt in a crucible for an hour; allow the contents of the crucible to cool: then rub together equal parts of this and of quicksilver until they are perfectly incorporated.—See *Hydrargyrum Stibiato-Sulphuratum*.

ÆTHIOPS MARTIALIS. *Martial ethiops.*

Lewis's Dispensatory.

Put filings of steel into an unglazed earthen vessel, with so much water as will stand above them about four inches; the whole is to be well stirred every day, and more water supplied as that in the vessel evaporates, so that the filings may remain always covered: continue this procedure for several months, till the filings lose their metallic aspect, and are reduced to a fine powder of an inky blackness.

ÆTHIOPS MINERALIS. *Ethiops mineral.*

Lond. Ph. 1721.

℞ Quicksilver.
Flowers of sulphur, each equal weights.
Rub them together in a glass mortar, until globules of mercury cease to appear.

ÆTHIOPS PER SE.

This name was formerly applied to the protoxide of mercury, obtained by shaking quicksilver in a large bottle.

ÆTHIOPS PLUMMERI. *Plummer's alterative powder.*

This name was formerly applied to a mixture of equal parts of calomel and golden sulphuret of antimony.

ÆTHIOPS VEGETABILIS. *Vegetable ethiops.*

Obtained by incinerating the sea-weed, Fucus vesiculosus, in a covered crucible. It is said to contain traces of iodine, and to have proved beneficial in bronchocele and scrofulous maladies, in doses of grs. x. to ʒij.

ALCOHOL.

A clear, colourless, very mobile liquid. Its sp. gr. is 0·794 at 60° Fahr. It boils at 172° Fahr., and has not been frozen by any degree of cold hitherto produced. Its composition is $C^4 H^6 O^2$.

Edin. Ph. 1841.

℞ Rectified spirit . . . . . Oj,
Lime . . . . . ʒxviij.
Break down the lime into small fragments; expose the spirit and lime together to a gentle heat in a glass matrass till the lime begins to slake; withdraw the heat till the slaking is finished, preserving the upper part of the matrass cool with damp cloth. Then attach a proper refrigeratory, and with a gradually-increasing heat, distil off seventeen fluidounces. The density of this alcohol should not exceed 0·796; if higher, the distillation must have been begun before the slaking of the lime was finished.

Note.—Density 794—6; when mixed with a little solution of nitrate of silver and exposed to bright light, it remains unchanged, or only a very scanty dark precipitate forms.

Dubl. Ph. 1850.

Take of stronger spirit Oj;
Pulverized fresh-burned lime, ʒx (D)
Having introduced the lime and spirit into a matrass, connected in the usual manner with a Liebig's condenser, let heat be applied until the lime begins to slake, and, when this process is completed, distil

by means of a chloride-of-zinc bath until the liquid which comes over, together with that obtained during the slaking, measures 2 ounces. This being rejected, the receiver should be changed, and the distillation resumed and continued until a product of nearly 16 ounces is procured.

The specific gravity of this product is ·795.

Alcohol dilutum. *Diluted alcohol.*

U. S. Ph. 1840.

℞ Alcohol.
Distilled water, of each Oj.
Mix.

Sp. gr. ·935.

Alegar. *Acetum Cerevisiæ.*

Ferment strong ale upon the cuttings of the vine, unripe grapes, or cheap raisins, so as to form a vinegar.

Alumen. *Alum. Sulphate of alumina and potash.*

The composition of this salt when crystallized is $Al^2 O^3$, 3 S O^3 + K O, S O^3 +24 H O,—that is, one eq. of sulphate of potash, one eq. of sulphate of alumina, and 24 eq. of water. It occurs native, but for commercial purposes is usually prepared artificially.

The most abundant source of alum is the mineral called *alum slate, alum shale*, or *alum schist*, which differs in composition in different localities, but always contains sulphuret of iron, alumina, and often magnesia and potash. The alum schist sometimes absorbs oxygen by mere exposure to the air; in other instances it requires to be exposed to a slow smothered combustion; in either case sulphate of alumina and sulphate of iron is formed, the latter of which is separated by crystallization. Sulphate of potash, if not produced to a sufficient extent from the mineral, is added to the sulphate of alumina to form the double salt or alum. Sometimes alum is formed by directly combining the alumina of clay or other aluminous substance with sulphuric acid, and then adding the salt of potash.

The sulphate of potash of common alum may be replaced by sulphate of ammonia or sulphate of soda.

Alum crystallizes in regular octahedrons, the solid angles of which are often replaced by the surfaces of the cube. It is soluble in 18·4 parts of cold water, and in 0·75 parts of boiling water. It has a sweetish astringent taste, and an acid reaction.

Alumen rupeum. *Rock alum. Roch alum.*

These terms were formerly applied to the colourless, transparent alum, in large masses, as would appear from Pomet and other ancient authors; but the term Roch alum is now used synonymously with the following:—

Alumen romanum. *Roman alum. Alumen rubrum. Rochi gallis. Roch alum.*

This was originally brought from Civita Vecchia in Italy, where it occurs native. It occurs in small fragments covered with a reddish powder, part of the soil from which it is dug. This alum has been much valued by dyers on account of its being free from iron, which the manufactured alum is not. The alum now sold as Roch or Roman alum is nothing more than common manufactured alum coloured with Armenian bole.

Alumen exsiccatum. *Dried alum. Alumen ustum. Burnt alum.*

Lond. Ph. 1851. *Alumen exsiccatum.*

℞ Alum . . . . . ℔j.

Melt the alum by fire: then let the fire be increased until the ebullition has ceased.

Edin. Ph. 1831.

Take any convenient quantity of alum; fuse it over the fire in a vessel of iron or earthenware; continue the heat till ebullition ceases, and vapour is no longer discharged; and then reduce it to powder.

Dubl. Ph. 1850. *Alumen siccatum.*

Take of alum any convenient quantity: liquefy it in a porcelain capsule over a gas lamp or open fire, and continue the heat until vapour ceases to be disengaged. Let the residue be then reduced to a fine powder, and preserved in a well-stoppered bottle.

Iron Alum. *Sulphate of iron and potash.*

This salt is called an *alum*, although containing no alumina, from its assuming the same crystalline form, and having the same constitution as common alum. Its composition is Fe^2O^3, $3SO^3+KO$, SO^3+24HO. It may be made as follows:—

℞ Peroxide of iron . . .	℔ ix.
Oil of vitriol	℔ xiv.
Sulphate of potash . . .	℔ x.
Water	q. s.

Dissolve the oxide of iron in the acid, dilute the mixture with water, add the sulphate of potash, and evaporate that crystals may be formed.

Iron alum is used as a mordant with dye-woods for dyeing black. It has also been used in medicine as a powerful astringent and styptic.

Amadou. *German tinder. Touchwood. Spunk.*

The *Boletus fomentarius*, when softened by beating, and cut into slices, is the true *amadou*; and this, when soaked in solution of saltpetre and dried, is *German tinder*. *Boletus igniarius*, *Touchwood*, or *Spunk*, is frequently substituted for *Boletus fomentarius*.

Amalgam, *for electrical machines.*

Fuse ʒij of zinc in a crucible, add ʒv of quicksilver, previously heated, and rub them together.

Ambergrisea. *Ambergris.*

A solid, opaque, greyish, or sometimes nearly black substance, having a smell resembling that of dried cow-dung. It is obtained from the cachalot or sperm whale, and is supposed to be the indurated fæces of the whale somewhat altered by disease. It is used in perfumery, and has been supposed to possess aphrodisiac properties in doses of 3 to 10 grains.

Ammonia.

This, which is commonly called the volatile alkali, consists of nitrogen and hydrogen, in the proportions of 1 eq. of the former to 3 eq. of the latter (NH^3.) Under ordinary circumstances, it exists as a gas, which is very soluble in water and in spirit. Water takes up nearly 800 times its volume of the gas at 32° Fahr. The watery solution of ammonia possesses most of the chemical properties of the gas, and therefore it is usually employed in that form.

Ammoniæ acetas. *Acetate of ammonia.*

This salt in solution has been long used in medicine, having been introduced to notice in the early part of the seventeenth century by Mindererus, and therefore called Mindererus's spirit.

Lond. Ph. 1851. *Liquor ammoniæ acetatis. Solution of Acetate of ammonia.*

℞ Diluted acetic acid . . .	Oj.
Sesquicarbonate of ammonia .	ʒix.
or as much as may be sufficient.	

Add the sesquicarbonate to the acid to saturation.

Destitute of colour and odour, the specific gravity is 1·022. It changes the colour of neither litmus nor turmeric. Hydrosulphuric acid being put in it is not coloured; neither does it throw down anything on chloride of barium being added. That which is thrown down by nitrate of silver is dissolved by water, but especially so by nitric acid. Potash being added it evolves ammonia, sulphuric acid being added, acetic vapours. The solution being evaporated that which remains dissipates in the fire.

Edin. Ph. 1841. *Ammoniæ acetatis aqua. Water of Acetate of ammonia.*

℞ Distilled vinegar (from French vinegar in preference) . f ℥xxiv.
Carbonate of ammonia . ℥i.

Mix them and dissolve the salt. If the solution has any bitterness, add by degrees a little distilled vinegar till that taste be removed. The density of the distilled vinegar should be 1·005, and that of the aqua acetatis ammoniæ 1·011.

Note.—Diluted aqueous solution of acetate of ammonia. Without action on litmus. Density 1·014. Free of colour or odour. Solution of potash disengages an ammoniacal, sulphuric acid an acetous odour. Unaffected by solution of nitrate of silver.

Dubl. Ph. 1850. *Ammoniæ acetatis liquor. Ammoniæ acetatis aqua.*

℞ Sesquicarbonate of ammonia, in fine powder ℥iiss. (D.) or a sufficient quantity.
Dilute acetic acid . . . Oiij.

To the acid, introduced into a bottle, gradually add the sesquicarbonate of ammonia to saturation, and dissolve by shaking, but without the aid of heat.

The specific gravity of this solution is 1·012.

Med. Uses.—When assisted by warmth and copious dilution, this is a valuable diaphoretic in the dose of from f ℥iv to f ℥vi. Externally, as a lotion, it is a refrigerant.

SYNONYMES.

Spirit of Mindererus.
Mindererus's Spirit.

Ammoniæ benzoas. *Benzoate of ammonia.* $NH^4 O, C^{14} H^5 O^3$.

Strong solution of ammonia is saturated with benzoic acid with the application of a gentle heat, and the salt allowed to crystallize on cooling. If the neutral solution be submitted to spontaneous evaporation, or if it be boiled, ammonia will be given off, and an acid salt will be formed, which is deposited in large regular crystals.

Ammoniæ bicarbonas. *Bicarbonate of ammonia. Berthollet's neutral carbonate of ammonia.* $NH^3, 2CO^2, 2HO$.

Dubl. Ph. 1850. *Ammoniæ bicarbonas.*

Take of commercial sesquicarbonate of ammonia, any convenient quantity. Reduce it to a fine powder, and then having spread it on a sheet of paper, expose it to the air for 24 hours. Let it be now enclosed in a well-stopped bottle.

Liquor ammoniæ citratis. *Solution of citrate of ammonia.*

Lond. Ph. 1851.

℞ Citric acid . . . . . ℥iij.
Distilled water . . . . Oj.
Sesquicarbonate of ammonia ℥iiss.
or as much as may be sufficient.

Dissolve the acid in the water, and add the sesquicarbonate to saturation.

Ammoniæ Hydriodas. *Hydriodate of Ammonia. Ammonii Iodidum. Iodide of Ammonium.* NH^3, HI, or NH^4, I.

This salt may be made by either of the following processes:—

1. Neutralize caustic ammonia or carbonate of ammonia with aqueous solution of hydriodic acid, and carefully evaporate the solution to dryness, keeping a slight excess of ammonia present during the evaporation, and conducting the latter part of the process over a water-bath.

2. To a solution of iodide of iron add carbonate of ammonia as long as any precipitate of carbonate of iron is formed; filter the solution, and evaporate it as in the previous process.

3. Triturate some pure iodine with distilled water, then add hydrosulphate of ammonia, in small quantities at a time, continuing the trituration, until the red colour of the iodine has disappeared. Boil

the mixture to expel sulphuretted hydrogen; filter the liquor, keeping it slightly alkaline with ammonia; and finally evaporate the clear liquor to dryness.

When pure it is colourless, but it acquires a yellowish colour if exposed to the air and light. It is deliquescent, and soluble in water and in spirit.

Ammoniæ hydrochloras. *Hydrochlorate of ammonia. Muriate of ammonia. Chloride of ammonium. Sal-ammoniac.* NH^4, Cl.

This salt is now made in this country from the ammoniacal liquor obtained in the manufacture of coal gas and animal charcoal. This liquor is either saturated directly with hydrochloric acid, and evaporated to crystallization, and the impure salt thus obtained purified by sublimation; or sulphuric acid is first added to the ammoniacal liquor, and the resulting sulphate of ammonia afterwards decomposed with common salt during the process of sublimation.

The sublimed sal-ammoniac is in large flattened hemispherical cakes. It is slightly deliquescent; soluble in 3 parts of cold and 1 part of boiling water; soluble also in alcohol.

Lond. Ph. 1836.

Note.—Translucent; it is sublimed by heat, and totally dissolved by water. It changes the colour of litmus slightly red. Chloride of barium throws down nothing. Potash or lime being added to it, ammonia is evolved.

Ammoniæ hydrosulphas. *Hydrosulphate of ammonia. Hydrosulphuret of ammonia. Hepatized ammonia. Boyle's fuming liquor. Beguin's sulphuretted spirit.*

These are composed of hydrogen, sulphur, and ammonia.

Dubl. Ph. 1850.

Ammoniæ hydro-sulphuretum.

℞ Solution of ammonia. . . f ℥iv.
Sulphuret of iron . . . . ℥iss. (D)
Oil of vitriol of commerce . f ℥iss.
Water . . . . . f ℥xv.
Distilled water . . . . f ℥ij.

Place the sulphuret of iron and water in a two-necked bottle, and, adding the oil of vitriol by degrees through a safety funnel, conduct by suitable tubes the sulphuretted hydrogen which is disengaged, first through the distilled water placed in a small intermediate phial, and then to the bottom of a bottle containing the ammonia, the neck of the latter, through which the glass tube conveying the gas passes, being loosely plugged with tow. If, when the development of gas has ceased, a drop of the ammoniacal liquid, added to a saturated solution of sulphate of magnesia, gives no precipitate, the preparation is completed; but should a precipitate occur, the hydrosulphuret still contains free ammonia, and must therefore be again subjected to the action of a stream of sulphuretted hydrogen.

The hydro-sulphuret of ammonia must be kept in a green-glass bottle, furnished with an accurately-ground stopper.

The specific gravity of this solution is ·999.

Brande gives the following process for a similar preparation:—

Boyle's fuming liquor.

℞ Slaked quick-lime, 4 parts;
Hydrochlorate of ammonia, 2 parts;
Sulphur, 1 part.

Introduce these into a tubulated earthen retort, the neck of which is attached to a quilled and tubulated receiver. The quill of the receiver is inserted into an empty bottle, and a bent tube from the tubulure of the receiver is made to dip into a bottle half filled with water. On applying the heat of a sand-bath to the retort, and keeping the receiver cool, a fuming liquor will condense in the latter, and vapour will pass over and be condensed in the bottle containing water. The whole distilled products are afterwards to be mixed together.

Liquor ammoniæ. *Solution of ammonia.*

Lond. Ph. 1836.

℞ Hydrochlorate of ammonia . ℥x.
Lime . . . . . ℥viij.
Water . . . . . Oij.

Put the lime slacked with water into a retort, then add the hydrochlorate of ammonia broken into small pieces, and the rest of the water. Let 15 fluidounces of solution of ammonia distil.

Lond. Ph. 1851.

Ammoniæ liquor. Solution of ammonia.

Destitute of colour; the specific gravity is ·960. Exposed to the air, it goes off into very sharp fugacious alkaline vapours, as shown by turmeric. It throws down nothing on lime-water being added: hydrosulphuric acid being put in it is not coloured; neither when it has been first saturated with nitric acid, does it throw down anything on either sesquicarbonate of ammonia or nitrate of silver, or chloride of barium being added. Nearly 10 grains of ammonia are contained in 100 grains.

Ammoniæ liquor fortior. Stronger solution of ammonia.

The specific gravity of this is ·882. This solution may be reduced to the form of solution of ammonia, by adding 2 ounces of distilled water to each fluid ounce. Nearly 30 grains of ammonia are contained in 100 grains.

Edin. Ph. 1841.

Ammoniæ aqua et *Ammoniæ aqua fortior.*

℞ Muriate of ammonia . . . ℥xiij.
Quick lime . . . . . ℥xiij.
Water . . . . . f℥vijss.
Distilled water . . . . f℥xij.

Slake the lime with the water, cover it up till it cools, triturate it well and quickly with the muriate of ammonia previously in fine powder, and put the mixture into a glass retort, to which is attached a receiver with a safety-tube. Connect with the receiver a bottle also provided with a safety-tube, and containing 4 ounces of the distilled water, but capable of holding twice as much. Connect this bottle with another loosely corked, and containing the remaining 8 ounces of distilled water. The communicating tubes must descend to the bottom of the bottles at the further end from the retort, and the receiver and bottles must be kept cool by snow, ice, or a running stream of very cold water. Apply to the retort a gradually-increasing heat till gas ceases to be evolved; remove the retort, cork up the aperture in the receiver where it is connected with the retort, and apply to the receiver a gentle and gradually-increasing heat, to drive over as much of the gas in the liquid contained in it, but as little of the water as possible. Should the liquid in the last bottle not have the density of ·960, reduce it with some of the stronger aqua ammoniæ in the first bottle, or raise it with distilled water, so as to form aqua ammoniæ of the prescribed density.

Note.—Aqua ammoniæ. Diluted aqueous solution of ammonia. Density ·960; diluted nitric acid occasions no effervescence; when saturated with nitric acid it is not precipitated by solution of nitrate of silver.

Aqua ammoniæ fortior. Concentrated aqueous solution of ammonia. Strong ammonia. Density ·880; one fluidounce with 2½ fluidounces of water makes aqua ammoniæ, for which other characters are given above.

Dubl. Ph. 1850.

Ammoniæ liquor. Ammoniæ causticæ aqua.

℞ Sal ammoniac, in fine powder,
Fresh-burned lime, of each . ℥viij.(D)
Water . . . . . f℥iv.
Distilled water . . . . f℥xvj.

Pour on the lime the 4 ounces of water, and, when the slaked lime has cooled, mix it well with the sal ammoniac by tritura-

tion in a mortar. Introduce the mixture into a matrass of glass, or, if such can be had, an iron bottle, and, having closed this by means of a cork perforated by a suitable tube for conveying off the gas, apply, with the intervention of sand, a gentle heat, which must be gradually augmented, and cause the ammonia, as it is evolved, to pass first through a small Wolfe's bottle furnished with a syphon safety-tube, containing mercury, and thence to the bottom of a pint bottle containing the distilled water. The temperature of the latter must be prevented from rising as the absorption of the gas proceeds, by surrounding the bottle which contains it with cold water, which should be frequently renewed.

The specific gravity of this solution is ·950.

Ammoniæ Liquor Fortior.

Apply heat to a mixture of sal ammoniac and slaked lime, using the proportions given in the preceding formula, and cause the gas, as it is disengaged, to pass to the bottom of a bottle containing 8 ounces of ammoniæ liquor; the temperature of the latter being prevented from rising by surrounding it with cold water, which should be frequently renewed.

Or,

Pass the ammoniacal gas disengaged from 8 ounces of sal ammoniac into 5 ounces of distilled water, taking care to keep the receiver cool.

The specific gravity of this solution is ·900.

Med. Uses.—Stimulant, rubefacient, and antacid; it may be exhibited in milk, water, or any cold liquid not incompatible with it. *Dose*, ♏x to ♏xxx of the weaker solution. If swallowed by mistake, vinegar or lemon-juice will form the best antidote.

Ammoniæ nitras. *Nitrate of ammonia. Nitrum semivolatile. Nitrum flammans.* NH^3, NO^5 +HO.

This salt is obtained by saturating dilute nitric acid with sesquicarbonate of ammonia, and evaporating the solution to crystallization. The salt is very soluble in water; it fuses at 230° Fahr.; at about 460° Fahr. it is decomposed into *nitrous oxide gas* and *water*. It is principally employed as the source of nitrous oxide gas.

Ammoniæ oxalas. *Oxalate of ammonia.* NH^3, C^2O^3+2HO.

Formed by neutralizing solution of oxalic acid with ammonia or sesquicarbonate of ammonia, and crystallizing. This is chiefly used as a test for lime.

Edin. Ph. 1841.

Ammoniæ oxalas.

℞ Oxalic acid	ʒiv.
Carbonate of ammonia . .	ʒviij.
Distilled water	Oiv.

Dissolve the carbonate in the water, add gradually the acid, boil and concentrate sufficiently for crystals to form on cooling.

Ammoniæ sesquicarbonas. *Sesquicarbonate of ammonia. Carbonate of ammonia. Smelling salts.*

Lond. Ph. 1851.

Ammoniæ sesquicarbonas.

Destitute of colour, translucent, it smells and tastes sharply; it changes the colour of turmeric into brown; it is dissipated by heat. It is dissolved in water. Nitric acid being added to saturation, nothing is thrown down either by chloride of barium or nitrate of silver.

Edin. Ph. 1841. *Ammoniæ Carbonas.*

℞ Sal-ammoniac	℔ i.
Chalk	℔ iss.

Reduce them separately to fine powder, mix them thoroughly, and subject the mixture in a retort with a proper receiver to a gradually-increasing heat so long as any vapours sublime.

Note.—Heat sublimes it entirely. A solution in water, when treated with nitric acid in excess, does not precipitate with

solution of nitrate of baryta or nitrate of silver.

Med. Uses.—Stimulant, antispasmodic, diaphoretic, antacid, and in large doses emetic. Should not be kept in powdered mixtures. Even the form of pill is by no means an eligible form of administering it. Dose, gr. v. to gr. xx.

Ammoniæ sulphas. *Sulphate of ammonia.*

Formed by saturating dilute sulphuric acid with sesquicarbonate of ammonia and crystallizing. It is usually formed in an impure state during the process for the preparation of sal-ammoniac. It is also obtained in large quantities by a process adopted for purifying coal-gas.

Ammoniacum Carbonicum pyro-oleosum. *Sal volatile cornu cervi. Volatile salt of hartshorn.*

Ph. Borussica, 1847.

℞ Carbonate of ammonia powdered ℥viij.
Ethereal animal oil . . . ℥ij.

Add the oil gradually, and mix them together.

Note.—A yellowish powder; to be kept in a well-closed bottle.

Ammoniacum.

Lond. Ph. 1851.

It is either in lumps, or has the appearance of grains. That which is in lumps requires purification.

Edin. Ph. 1841.

Gummy-resinous exudation of Dorema mmoniacum. Ammoniac.

Ammoniacum præparatum. *Prepared ammoniacum.*

Lond. Ph. 1851.

℞ Ammoniacum in lumps . ℔j.
Water, as much as may be sufficient to cover the ammoniacum.

Boil the ammoniacum with the water until they may be mixed. Strain the mixture through a hair sieve, and evaporate in a water bath, constantly stirring, so far that it may harden when it shall have cooled.

Amyl, Hydrated Oxide of. *Fusel Oil. Oil of Grain.*

This oily liquid is obtained, in the rectification of alcohol, among the last portions of the distilled products. It is purified from spirit, water, and other substances with which it is found mixed, by washing it with water and decanting the supernatant portion, then distilling it from chloride of calcium, and fractionizing the products of distillation, retaining that portion which boils at about 268° Fahr. It is used for making Valerianic acid, and some of the so-called *Fruit Essences*.

Amylum. *Starch.*

A vegetable proximate principle, which exists abundantly in the vegetable kingdom. It is principally procured from wheat, from potatoes, and from rice. A patent was taken out for its preparation from rice. Starch obtained from the two last-named sources is usually distinguished as potato starch, and rice or patent starch. The different kinds of starch may be distinguished with the aid of a microscope, from differences in the size and shape of the grains.

Amylum Iodatum. *Amyli iodidum. Iodide of starch.*

Ph. Castr. Ruthena, 1840.

℞ Iodine . . . . . gr. xxiv.
Starch . . . . . ℥j.

Rub the iodine to powder with a few drops of spirit, then mix it with the starch.

Note. It has a light blue colour.

Dr. A. Buchanan of Glasgow has proposed this compound as a means of administering iodine in large doses without causing irritation of the stomach. The dose is a heaped teaspoonful, given in water-gruel, three times a-day; and it may be increased to a tablespoonful or more. Dr. Buchanan conceives that, by means of

the starch, the iodine is converted into hydriodic acid, and in this state enters into the circulation. He prefers it to any other preparation of iodine for producing the alterative, apart from the irritant effects of that medicine.

Annotto. *Arnotto. Orleana.*

A red colouring matter obtained from the seeds of *Bixa orellana;* used in dyeing and for colouring cheese. *Flag annotto* is in square cakes, weighing two or three pounds each. *Egg annotto* is in cakes of an egg shape, and *Roll annotto* in long rolls. The colour of annotto is changed to blue by strong sulphuric acid.

Anthracokali, or *Anthrakokali.*

Dr. Poyla.

Form a caustic solution of potassa, with ℥vj carbonate of potash, ℥iijss lime, and Oiv water; evaporate this in an iron vessel until it shall measure about f ℥vj, then stir in ℥v of finely-powdered mineral coal; withdraw the vessel from the fire, and continue to stir the mixture until it is reduced to the condition of a uniform black powder, which is to be immediately put into dry, well-stopped bottles.

Anthraco kali.

Codex Medic. Hamberg. 1845.

℞ Hydrate of potash . . . ℥vij.
Kennel coal in fine powder ℥v.

Melt the hydrate of potash and stir in the powdered coal; the mass taken from the fire is to be rubbed to a fine powder and put into small bottles.

Note.—A black powder, with a caustic taste, and empyreumatic smell. Becomes moist on exposure to the air. 10 gr. with ℥j of water, after being filtered, forms a clear, dark-brown solution, giving a precipitate with acids, without effervescence.

To be sold with precaution.

A process the same as the above is given in the Ph. Badensia 1841.

Med. Uses.—Administered in cases of chronic rheumatism, scrofula, &c. *Dose,* 2 grains, two or three times a-day.

Anthracokali Sulphuretum. *Sulphuretted Anthracokali.*

Prepared according to the above formula of Dr. Poyla, but with the addition of ℥iv of sulphur.

Unguentum anthracokali. *Anthracokali ointment.*

℞ Anthracokali . . . . ℥j.
Lard . . . . . ℥j.
Mix.

Anti-attrition. *Grease for lubricating machinery.*

The following are some of the preparations used for this purpose:—

No. 1.

℞ Lard . . . . . ℔x.
Camphor . . . . . ℥iv.
Blacklead . . . . . ℔ss.
Mix.

Used to diminish friction, and to prevent iron from rusting. A patent, which has expired, was taken out for a compound, under the name of *Anti-attrition,* which consisted of 1 part of plumbago, and 4 parts of lard or other grease.

Cheaper preparations than the above are now used for railway and other machinery. The following are some of these:—

No. 2.

℞ Palm Oil,
Tallow . . . each 118℔s.
Carbonate of soda . . 56℔s.
Water . . . . . 30 gall.

Dissolve the carbonate of soda in the water, and put the solution into a suitable vessel, capable of holding about three times the quantity. Melt the palm oil and tallow together, and when they have cooled to about 100° Fahr., pour the still fluid fats through a sieve into the solution of soda, and stir them together until a homogeneous mass is obtained.

The proportions of the ingredients indicated are suitable for use when the air is at its mean temperature. In warm weather the quantity of tallow is increased, and that of palm oil diminished: in cold weather the palm oil is increased and the tallow diminished.

No. 3.

℞ Bean or other flour	1 cwt.
Boiling water	6 ,,
Milk of lime, about the consistence of cream	8 ,,
Rosin oil	10 ,,

Make the flour into a paste with the boiling water, then add the milk of lime, and afterwards the rosin oil, and well mix the whole together.

No. 4.

Liquid hydrocarbons, obtained by submitting some varieties of coal, such as Boghead or Cannel coal, to destructive distillation at a low red heat, are used, under the name of *Paraffine oils*, for lubricating machinery, for which purpose they possess valuable properties.

ANTIMONIUM. *Antimony. Regulus of antimony. Symb.* Sb. *eq.* 129.

Specific gravity 6·7. It is usually obtained from the native sulphuret.

ANTIMONIUM METALLICUM PURUM. *Pure metallic antimony.*

Ph. Castr. Ruthena, 1840.

℞ Sulphuret of antimony	16 parts.
Cream of tartar	6 parts.

Mix, and put the powder in small quantities into a vessel heated to redness; when the reaction is over, fuse the mass; and after a quarter of an hour pour it out, and separate the metal from the slag.

ANTIMONIUM CALCINATUM. *Calx antimonii. Diaphoretic antimony.*

Lond. Ph. 1788.

℞ Tersulphuret of antimony	℥viij.
Nitrate of potash	℥xxiv.

Mix, and deflagrate in a crucible heated to redness. Calcine the residue for half an hour, and, when cold, powder it, and wash away whatever is soluble with repeated quantities of water. Collect and dry the residue.

Ph. Borussica, 1847.

℞ Metallic antimony	1 part.
Nitrate of potash	2 parts.

Mix, and deflagrate in a crucible. Calcine for half an hour; wash away the soluble salt, and dry at a temperature not exceeding 104° Fahr.

Note.—A white powder, without smell or taste, and free from nitrate and nitrite of potash.

SYNONYMES.

Kali stibicum. Antimonium diaphoreticum ablutum. Calx antimonii lota. Potassæ Antimonias. Antimoniate of potash.

ANTIMONII CINIS. *Antimony ash.*

This is obtained by roasting the tersulphuret of antimony, by which means part of the sulphur is burned away, and a mixture of teroxide and tersulphuret of antimony remains, with probably a little antimonious acid.

ANTIMONII CROCUS. *Crocus metallorum. Liver of antimony. Saffron of antimony.*

Lond. Ph. 1788.

℞ Tersulphuret of antimony	℔j.
Nitrate of potash	℔j.
Chloride of sodium	℥j.

Mix, and deflagrate in a crucible heated to redness; separate the scoria, and preserve the fused mass.

It may also be made by fusing antimony ash.

ANTIMONII CROCUS LOTUS. *Washed liver of antimony.*

The *Crocus antimonii* of the Lond. Ph. 1788, repeatedly washed with water.

ANTIMONII OXYDUM. *Oxide of antimony. Teroxide of antimony. Sesquioxide of antimony.*

Edin. Ph. 1841. *Antimonii oxidum.*

℞ Sulphuret of antimony in fine powder	℥iv.
Muriatic acid (commercial)	Oj.
Water	Ov.

Dissolve the sulphuret in the acid with the aid of a gentle heat; boil for half an

hour; filter; pour the fluid into the water; collect the precipitate on a calico filter; wash it well with cold water, then with a weak solution of carbonate of soda, and again with cold water, till the water ceases to affect reddened litmus paper. Dry the powder over the vapour-bath.

Note. — Entirely soluble in muriatic acid, and also in a boiling solution of bitartrate of potash; snow white; fusible at a full red heat.

Dubl. Ph. 1850. *Antimonii Oxydum. Antimonii Oxydum Nitro-muriaticum.*

℞ Solution of terchloride of antimony . . . . . f ℥xvj.
Water . . . . . Cij.
Solution of caustic potash . Oj.
Distilled water, a sufficient quantity.

Pour the antimonial solution into the water, and having stirred the mixture well, set it by until the white precipitate which forms has subsided. Draw off the supernatant liquid by decantation, or the syphon, and, having agitated the sediment with a gallon of distilled water, allow the whole to stand until the oxide has fallen to the bottom. Decant again, and having placed the sediment on a calico filter, wash it with distilled water until the liquid which trickles through reddens blue litmus paper only in a very slight degree. The precipitate is now to be shaken occasionally for half an hour, with the solution of caustic potash, and then washed on a filter with boiling distilled water, until the washings cease to give a precipitate on being dropped into an acid solution of nitrate of silver. Lastly, let the product be dried at a heat not exceeding 120°.]

Remarks.—The precipitates formed in the two foregoing processes constitute the *Pulvis algarothi*, or, *Algaroth's powder*, sometimes called *Mercurius vitæ*, or *Mercury of life*. It consists of oxide of antimony with a little chloride of antimony, and is sometimes called the *Oxychloride of antimony*. On washing the precipitate, as directed in the Edinburgh Pharmacopœia, with solution of carbonate of soda, or as directed in the Dublin Pharmacopœia, with caustic potash, the whole of the chlorine is removed, and teroxide of antimony remains. The same oxide may also be obtained by adding solution of ammonia to a concentrated solution of emetic tartar, and heating the mixture, when the oxide of antimony is precipitated.

Antimonium oxydatum album. *White oxide of antimony.*

Ph. Danica, 1840.

℞ Powdered metallic antimony 1 part.
Nitrate of potash . . . 4½ parts.

Mix, and deflagrate in a suitable vessel, then heat it to redness, and while still hot pour it into twice its volume of distilled water; drop into the solution sulphuric acid until it is in excess; the precipitate being well washed and dried, is to be powdered.

Note.—This powder should be quite white, without taste or smell, and insoluble in diluted acetic acid. It will consist principally of *antimonic acid.*

Antimonium oxydatum griseum. *Grey oxide of antimony.*

Ph. Danica, 1840.

℞ Powdered metallic antimony ℥iv.
Nitric acid . . . . . ℥viij.
Distilled water . . . . ℥xxxij.

Digest together at a temperature of about 140° Fahr. until nitrous gas is no longer disengaged. Wash the precipitate, and boil it for half an hour with ℥ss of pure carbonate of soda and a sufficient quantity of distilled water; finally wash and dry it.

Note.—It should be a greyish-white powder, easily reduced at the blowpipe flame on charcoal, without any garlic smell, and when heated alone will fuse with a yellow colour. Soluble in muriatic acid.

Antimonium oxydatum griseum.

Ph. Suecica, 1845.

Crude sulphuret of antimony is to be heated in an iron or earthen vessel, and

kept constantly stirred, without being allowed to fuse, until it ceases to develop sulphurous acid. The grey powder is then to be fused, or if it will not fuse, add to it, in very fine powder, $\frac{1}{20}$ or $\frac{1}{16}$ part of sulphuret of antimony; then fuse and pour it out.

Pulvis antimonii compositus. *Compound powder of antimony.*

Lond. Ph. 1851.

℞ Tersulphuret of antimony, powdered . . . . . ℔j.
Horn shavings . . . . . ℔ij.

Mix, and throw them into a crucible heated to redness in the fire, and stir them constantly until vapour no longer rises. Rub the residue to powder, and put it into a proper crucible. Heat it in the fire, applying the heat gradually and keeping it red hot for two hours. Reduce what remains to a fine powder.

Edin. Ph. 1841. *Pulvis antimonialis. Antimonial powder.*

℞ Sulphuret of antimony, in coarse powder.
Hartshorn shavings, equal weights.

Mix them, put them into a red-hot iron pot and stir constantly till they acquire an ash-grey colour, and vapours no longer arise. Pulverise the product, put it into a crucible with a perforated cover, and expose this to a gradually-increasing heat till a white heat be produced, which is to be maintained for two hours. Reduce the product when cold to fine powder.]

Note.—A mixture chiefly of antimonious acid and phosphate of lime, with some teroxide of antimony, and a little antimonite of lime.

Dubl. Ph. 1850. *Pulvis Antimonialis.*

℞ Tartarized antimony,
Phosphate of soda, of each ℥iv. (D)
Chloride of calcium . . ℥ij. (D)
Solution of ammonia . . f ℥iv.
Distilled water, C iss, or a sufficient quantity.

Dissolve the tartarized antimony in half a gallon, and the phosphate of soda and chloride of calcium, each in a quart of water. Mix the solutions of the tartarized antimony and phosphate of soda when cold, and then pour in the solution of chloride of calcium, having first added to the latter the water of ammonia. Boil now for 20 minutes, and having collected the precipitate, which will have then formed, on a calico filter, wash it with hot distilled water until the liquid which passes through ceases to give a precipitate with a dilute solution of nitrate of silver. Finally, dry the product by a steam or water heat, and reduce it to a fine powder.]

Note.—This preparation differs essentially from those of the London and Edinburgh Pharmacopœias, all the antimony present in this being in the state of teroxide.

Med. Use. — A mild diaphoretic and laxative; but in some cases, when prepared according to the London or Edinburgh Pharmacopœia, it has been given in large quantities without producing any sensible effects, while that prepared according to the Dublin Pharmacopœia often produces nausea and sickness. The *dose* is usually from 3 to 10 grains, or even more.

Remarks.—This powder is an imitation of the celebrated *Dr. James's fever powder*, which was brought into notice about the middle of the last century. Dr James patented the preparation of his powder, but the process described in the specification of his patent yields a product totally different from that which he and his successors have sold. James's powder was subsequently analyzed by Dr. Pearson, and on the result of that analysis the formula adopted by the Lond. College of Physicians was said to have been founded. It appears, however, that the formula had been published even before its adoption by Dr. James, and that a powder was prepared from it called *Lisle's fever powder*, a remedy originally introduced from Italy. The formula, the same as that given by Dr. Pearson and adopted by the College of Physicians, is in Colborne's English Dispensatory of 1756, a

date long anterior to the publication of the College formula, which first took place in 1788.

There is some slight difference between the composition of the compound made according to the London or Edinburgh Pharmacopœia and that now sold as *Dr. James's powder* by the proprietors of that nostrum; but it is probable that this difference has been purposely created by those interested in the patented preparation, since the introduction of the formula into the Pharmacopœias. The patented preparation is said to be the more active.

Antimonii oxysulphuretum.

Oxysulphuret of antimony.

Lond. Ph. 1851.

℞ Tersulphuret of antimony, powdered	℥vij.
Solution of soda	Oiv.
Distilled water	Cij.

Diluted sulphuric acid, as much as may be sufficient.

Mix the tersulphuret and soda with the water, and boil with a slow fire for 2 hours, frequently stirring, distilled water being often added, so that it may fill nearly the same measure. Strain the solution, and gradually drop in as much of the acid as may be sufficient to throw down the oxysulphuret of antimony; then wash away the sulphate of soda with water, and dry what remains with a gentle heat.

Golden red; the whole is dissolved in hot solution of potash, nearly the whole in hot hydrochloric acid, hydrosulphuric acid being evolved, and a little sulphur left. These solutions are destitute of colour.

Edin. Ph. 1841.

Antimonii sulphuretum aureum.

℞ Sulphuret of antimony in fine powder	℥j.
Solution of potash	f ℥xj.
Water	Oij.

Mix the water and solution of potash, add the sulphuret, boil for an hour, filter immediately, and precipitate the liquid, while hot, with an excess of diluted sulphuric acid. Collect the precipitate on a calico filter, wash it thoroughly with water, and dry it with a gentle heat.

Note.—A mixture or compound of sesquisulphuret of antimony, sesquioxide of antimony, and sulphur.—*Golden Sulphuret of Antimony.* Tasteless: twelve times its weight of muriatic acid, aided by heat, will dissolve most of it, forming a colourless solution, and leaving a little sulphur.

Dubl. Ph. 1850.

Antimonii sulphuretum præcipitatum. Sulphur antimoniatum fuscum.

℞ Prepared sulphuret of antimony.	℥v.
Carbonate of potash from pearl ash, first dried by a low red heat, and reduced to powder	℥iv.
Water	Cj.
Pure sulphuric acid	f ℥ij.
Distilled water	Oij.

Mix the sulphuret of antimony and carbonate of potash in a mortar, and heat the mixture in a Hessian crucible, first cautiously until effervescence ceases, and then to low redness, so as to produce liquefaction. Pour out the melted mass on a clean flag, and, when it has concreted and cooled, rub it to a fine powder in a porcelain mortar. Add this, in successive portions, to the gallon of water while boiling in an iron vessel, and, having maintained the ebullition for 20 minutes, transfer the whole to a calico filter, and cause the solution which passes through to drop into the distilled water previously mixed with the sulphuric acid. Let the precipitate which forms be collected on a calico filter, and let warm distilled water be repeatedly poured upon it, until the liquid which passes through ceases to give a precipitate when dropped into a solution of nitrate of barytes. Finally, dry the product on porous bricks placed in a warm atmosphere.

Remarks.—The precipitates obtained by the first two of the foregoing processes are much darker coloured than that which is

met with in commerce under the name of *Golden Sulphuret of Antimony*. One of the following processes will yield a product more nearly resembling the usual commercial article:—

No. 1.

℞ Tersulphuret of antimony, 4 parts.
Lime . . . . . 8 parts.
Water . . . . . 80 parts.

Boil for half an hour and strain; then add hydrochloric acid in excess. Collect, wash, and dry the precipitate.

The whole of the hydrochloric acid should be added at once.

No. 2.

℞ Tersulphuret of antimony, 2 parts.
Carbonate of potash . . 4 parts.
Sulphur . . . . . 1 part.

Mix, and fuse the mixture in a crucible. When cold, powder the fused mass, and boil it with twenty times its weight of water for half an hour; strain the liquor, and add a large excess of diluted sulphuric acid. Collect, wash, and dry the precipitate.

No. 3.

Ph. Hanov. nova, 1831.

℞ Black antimony, levigated,
Flowers of sulphur, āā p. æ.
Solution of potash, q. s.

Mix, and boil in an iron vessel, renewing the water from time to time, until nearly dissolved. Mix the solution with twice its volume of hot water, and filter it after 24 hours. To the clear fluid add three times its volume of water, and drop in diluted sulphuric acid as long as a precipitate is formed. Wash this with warm water, dry it with a gentle heat, and keep it in a dark place.

Antimonii potassio-tartras.

Potassio-tartrate of antimony.

Lond. Ph. 1851.

℞ Tersulphuret of antimony, rubbed into the finest powder . . . . . ℔j.
Sulphuric acid . . . . f ʒxv.
Bitartrate of potash . . . ʒx.
Distilled water . . . . Ov.

Mix the tersulphuret with the acid in an iron vessel. To these apply a slow fire under a hood, frequently stirring with an iron spatula. Then increase the fire, until, the flame of the burning sulphur being extinguished, nothing remains besides a whitish pulverulent mass. Wash this with water when it has cooled until nothing acid can be perceived, and dry. Accurately mix 9 ounces of this salt with the bitartrate, and boil in the water for half an hour. Strain the solution as yet hot and set aside that crystals may form. The solution being poured off, dry these, and evaporate the solution again that it may crystallize.

Destitute of colour, it is dissolved in water. This solution is not changed by ferrocyanide of potassium. Hydrosulphuric acid being added, it throws down a substance of a reddish colour: either chloride of barium or nitrate of silver being added it throws down nothing, or that which is dissolved again on water being added. It throws down that by nitric acid which an excess of the same acid again dissolves.

Hydrosulphuric acid throws down 49 grains of tersulphuret of antimony from 100 grains dissolved in water.

Edin. Ph. 1841.

Antimonium tartarizatum.

℞ Sulphuret of antimony in fine powder . . . . . ʒiv.
Muriatic acid (commercial) Oi.
Water . . . . . Ov.

Dissolve the sulphuret in the acid with the aid of a gentle heat, boil for half an hour; filter; pour the liquid into the water; collect the precipitate on a calico filter, wash it with cold water till the water ceases to redden litmus-paper; dry the precipitate over the vapour-bath.

℞ This precipitate . . . ʒiij.
Bitartrate of potash . . ʒiv. & ʒij.
Water . . . . . f ʒxxvii.

Mix the powders, add the water, boil for an hour, filter, and set the liquid aside to crystallize. The mother liquor, when concentrated, yields more crystals, but

not so free of colour, and therefore requiring a second crystallization.

Note.—Entirely soluble in twenty parts of water; solution colourless, and not affected by solution of ferro-cyanide of potassium; a solution in 40 parts of water is not affected by its own volume of a solution of eight parts of acetate of lead in thirty-two parts of water and fifteen parts of acetic acid.

Dubl. Ph. 1850.

Antimonium tartarizatum. Antimonii et *potassæ tartras, sive tartarum emeticum.*

℞ Oxide of antimony . . .	℥v.
White bitartrate of potash .	℥vj.
Distilled water	Oij.

Rub the bitartrate to a fine powder, and, having carefully mixed with it the oxide of antimony, add a little water, so as to convert the mixture into a thick paste, which should be set by for 24 hours. Pour on this the remainder of the water previously raised to the temperature of 212°, and, having boiled for 15 minutes, with repeated stirring, in a glass or porcelain vessel, filter through calico, returning the slightly turbid liquid which first passes through so as to obtain a clear solution. After 12 hours let the solution be decanted from the crystals which will have formed, and boiled down to one-third, when, upon cooling, an additional product will be obtained. The salt, after being dried upon blotting paper without the application of heat, should be preserved in a bottle.

SYNONYMES.

Emetic Tartar.
Tartar Emetic.

Antimonii Terchloridum. *Terchloride of antimony. Butter of antimony.* $SbCl^3$.

Lond. Ph. 1746.

℞ Sulphuret of Antimony . .	℔j.
Corrosive sublimate . . .	℔ij.

Let them be reduced to a powder separately, well mixed, and let them then be distilled from a retort, the neck of which must be large, by a gentle sand heat; let that which ascends into the neck of the retort be dissolved by exposure to the air.

What remains in the retort, after the distillation is over, is the sulphuret of mercury, called also the *Cinnabar of antimony;* the origin of this name is hence sufficiently obvious.

Lond. Ph. 1787.

℞ Crocus of antimony reduced to powder,	
Sulphuric acid of each .	℔j.
Dried chloride of sodium .	℔ij.

Pour the sulphuric acid into the retort, gradually adding the chloride of sodium and crocus of antimony previously mixed; then distil by a sand bath. Let the matter distilled be exposed to the air for several days; then let the liquid portion be poured off from the dregs.

The dark brown liquid met with in commerce under the name of *Muriate of antimony*, or *Butter of antimony*, is usually made by decomposing tersulphuret of antimony with hydrochloric acid, with the aid of heat.

Antimonii Tersulphuretum. *Tersulphuret of antimony.* (L.) *Antimonii sulphuretum.* (E.) *Antimonii sulphuretum præparatum.* (D.)

This is the black sulphuret of antimony, and was anciently used by the Asiatic and Greek ladies as a pigment for the eyebrows. In the native state, it is technically termed *Antimony ore*, and when first fused out of its gangue, *Crude antimony*, or *Sulphuret of antimony*. It is obtained by fusion from its siliceous gangue. It forms the source of the other preparations of antimony. The Dublin College gives a formula for its preparation.

Lond. Ph. 1836.

Note.—With heat, it is totally dissolved by hydrochloric acid. From the acid in which it is boiled, a white precipitate is

thrown down by distilled water; from the strained liquor, hydrosulphuric acid afterwards throws down a reddish-coloured substance.

Edin. Ph. 1841.

Note.—Entirely soluble in muriatic acid with the aid of heat.

Dubl. Ph. 1850.

ANTIMONII SULPHURETUM. *Sulphuret of antimony. Antimonii sulphuretum præparatum.*

Take of sulphuret of antimony of commerce, any convenient quantity; let this be reduced to powder, and the finer particles having been separated from the coarser, by the method explained in the formula for creta præparata, let them be dried, and preserved for use.

ANTIMONIUM VITRIFICATUM. *Vitrified antimony. Glass of antimony.*

Lond. Ph. 1788.

℞ Tersulphuret of antimony in powder, any quantity.

Burn it in a broad earthen vessel, with a fire gradually increased, stirring it constantly with an iron rod, until it ceases to give off sulphurous vapours. Put the powder that remains into a crucible, of which it shall fill two-thirds; fit on a cover, and heat it in the fire, first moderately, and afterwards with an intense heat, so as to fuse the mass. When fused, pour it out on an iron slab.

ANTIMONII VITRUM CERATUM. *Ceratum antimonii vitrum. Cerated glass of antimony.*

℞ Glass of antimony in powder	℥j.
Yellow wax	ʒj.

Melt the wax in an iron vessel, and throw into it the powdered glass of antimony; keep the mixture over a gentle fire for half an hour, continually stirring it; then pour it out upon a paper, and when cold reduce it to a powder.

The glass melts in the wax with the aid of a gentle heat. After it has been over the fire for about twenty minutes, it begins to change colour; and in ten minutes more, it assumes nearly the colour of Scotch snuff, which is an indication that the process is completed. The above quantity loses about one drachm in weight during the process.

This preparation was first introduced to notice in this country, in the *Edinburgh Essays*, in the beginning of the 18th century. The formula was afterwards introduced into the Edinburgh Pharmacopœia.

Dose.—From two to five grains, in dysentery.

PANACEA ANTIMONII. *Panacea of antimony.*

℞ Black sulphuret of antimony	℥vj.
Nitre	℥x.
Common salt	℥iss.
Charcoal	℥j.

Mix together in powder, and project it into a red-hot crucible: keep it in the fire for a quarter of an hour, then allow the crucible to cool, break it, separate and reject the upper stratum or scoria, and powder and wash the other part. When washed, it should be of a fine golden colour. It is said to be the basis of *Lockyer's Pills*.

CALCARIA STIBIATO-SULPHURATA. *Calcium antimoniato-sulphuratum. Calx antimonii cum sulphure Hoffmanni. Hepar antimonii calcareum.*

Ph. Badensia, 1841.

℞ Crude sulphuret of antimony	ʒiij.
Sulphur	℥ss.
Lime	℥ij.

Powder and mix the ingredients, and heat them in a covered and well-luted crucible for an hour. On opening the crucible, after it has cooled, the upper part of the powder is to be rejected, and that which is underneath kept in well stopped bottles.

Note.—It is a yellowish, uncrystallizable powder, having a disagreeable, sulphurous smell. Not completely soluble in water, and yielding from the solution an orange yellow precipitate, with the addition of hydrochloric acid.

Apatite.

A mineral consisting principally of phosphate of lime. It occurs in Cornwall, Devonshire, and abundantly in some parts of Spain. It has been imported from the latter country for the manufacture of artificial guano, or manure.

Apozem.

(From ἀπό, and ζέω, to boil.) A decoction.

Aqua. *Water.*

A compound of oxygen and hydrogen, (HO). An important agent in nature, and in many pharmaceutical operations. The natural sources from which it is usually derived, for use in medicine, domestic economy, and the arts, are, 1st, subterraneous wells; 2ndly, rivers; 3rdly, rain. The water obtained from these different sources is always contaminated with some foreign matters; distillation is the process usually resorted to for the purpose of freeing it from such impurities.

Aqua acidi carbonici. *Carbonic acid water.*

The liquid sold as soda water is often nothing more than water into which carbonic acid gas has been condensed by means of a force-pump: sometimes, even atmospheric air is substituted for carbonic acid. The practice of introducing soda into "soda water" has, however, been more frequently adopted latterly by the manufacturers.

Aqua alexeteria. *Alexeterial water.*

Lond. Ph. 1746.

℞ Fresh spearmint leaves . . ℔iss.
Fresh wormwood tops,
Fresh angelica leaves, each . ℔j.
Water, a sufficient quantity.
Distil 3 gallons.

Aqua alexeteria spirituosa. *Spirituous alexeterial water.*

Lond. Ph. 1746.

℞ Fresh spearmint leaves . . ℔ss.
Fresh angelica leaves,
Fresh sea wormwood tops, each ℥iv.
Proof spirit . . . . cong. j.
Water, a sufficient quantity.
Distil 1 gallon.

Aqua aluminosa Bateana. *Bate's alum water.*

Ph. Bateana and *Lond. Ph.* 1746.

℞ Alum,
White vitriol, each . . . ℥ss.
Water . . . . . Oij.

Boil the salts in the water till they are dissolved, and filter the solution through paper.

Aqua amygdalæ amaræ. *Bitter almond water.*

Obtained by distilling the cake, left after the expression of the fixed oil from bitter almonds, with water. Formulæ are given in most of the foreign pharmacopœias for the preparation of this water, and in many cases it is ordered to be kept of two different degrees of concentration.

Aqua amygdalarum amararum.

Ph. Borussica, 1847.

℞ Bitter almonds . . . . ℔ij.

Bruise them, and separate the fixed oil by pressure. Powder the pressed cake, and mix it with

River or rain water . . ℔x.
Rectified spirit, sp. gr. ·900 ℥iv.

Distil ℔ij. by the heat of a steam-bath. It should be carefully kept in small well-stopped bottles.

Note.—Limpid, or sometimes slightly turbid. ℥ij. yield 6·66 to 7 grains of cyanide of silver, which is equivalent to ⅔ gr. of hydrocyanic acid in each ounce of the water.

The process in the *Ph. Castr. Ruthena*, 1840, is the same as the foregoing.

Dose.—From 20 to 30 drops.

Aqua amygdalarum amararum.

Codex, Ph. Franç. 1839.

℞ Fresh bitter almond cake . ℔j.
Water . . . . . q. s.

Mix them well, adding sufficient water to make the mixture quite liquid; then put it into a still, and after arranging the apparatus for distillation, let it stand for 24 hours. At the expiration of this time, distil ℔ij. of water, from which the excess of oil is to be separated by filtration through a wetted filter.

Remark.—In each of the three foregoing cases, water of one strength only is ordered.

Aqua amygdalarum amararum concentrata.

Ph. Hannov. nova, 1831.

℞ Bitter almonds . . . . ℔ij.
Water . . . . . ℔x.
Rectified spirit . . . . ℥ij.
Distil off ℔ij.

℥j. will contain gr. ss. of hydrocyanic acid.

Aqua amygdalarum amararum diluta.

Ph. Hannov. nova, 1831.

℞ Bitter almonds . . . . ℥viij.
Water . . . . . Oxlviij.
Distil off 32 pints.

℥xvj. will contain ¼ gr. of hydrocyanic acid.

Aqua amygdalarum amararum concentrata.

Ph. Slesvico-Holsat. 1831.

℞ Bitter almonds . . . . ℔iij.
Rectified spirit. . . . . ℥v
Water . . . . . ℔ij.
Distil ℔iij.

Aqua amygdalarum amararum diluta.

Ph. Slesvico-Holsat. 1831.

℞ Bitter almonds . . . . ℔ij.
Water . . . . . q. s.
Distil ℔xx.

Aqua amygdalarum amararum concentratum.

Ph. Danica, 1840.

R Bitter almonds . . . . ℔ij.
Water . . . . . ℔iv.
Rectified spirit. . . . . ℥iv.

The almonds are to be freed by pressure from the fixed oil, powdered, then mixed with the water and rectified spirit, and allowed to stand for 12 hours; finally ℔ij. of water is distilled off.

It should be slightly milky, smelling and tasting of bitter almonds. ℥iv., after being mixed with a sufficient quantity of caustic potash, chloride of iron, and muriatic acid, should yield gr. v. of Prussian blue.

Dose.—60 drops.

Aqua amygdalarum amararum diluta.

Ph. Danica, 1840.

℞ Bitter almonds . . . . ℔ij.
Water . . . . . q. s.
Distil ℔xxiv.

Aqua amygdalarum amararum concentrata.

Codex Medic. Hamburg. 1845.

℞ Bitter almonds. . . . . ℔iij.
Rectified spirit . . . . ℥v.
Water . . . . . ℔xij.

Powder and press the bitter almonds, then rub the cake with the water, and let them stand for 12 hours, frequently shaking: then distil a quarter of it into a receiver containing the rectified spirit. The receiver is then to be removed, and the distillation continued until ℔iij. is recovered.

Note.—f ℥ j. should yield from 3 to 4 grains of cyanide of silver equal to gr. ss. of dry prussic acid.

Dose.—60 drops.

Aqua amygdalarum amararum diluta.

Codex Medic. Hamburg. 1845.

℞ Concentrated bitter almond water. . . . . ℥j.
Distilled water . . . . ℥xxj.
Mix.

Note.—℥xj will contain ¼ grain of dry prussic acid.

Aqua amygdalarum amararum.

Ph. Saxonica, 1837.

℞ Bitter almonds	℥xij.
Common salt	℥ij.
Water	℔v.

Powder and press the bitter almonds, then mix the cake with the salt and water; lastly, distil off ℔j.

℥iv. yield 4 or 5 grains of cyanide of silver.

Dose.— 40 drops.

Aqua amygdalarum amararum dilutum.

Ph. Saxonica, 1837.

℞ Bitter almond water	1 part.
Distilled water	24 ,,

Mix.

Aqua amygdalarum amararum concentrata.

Ph. Suecica, 1845.

℞ Bitter almonds, powdered	1 part.
River water	4 ,,

Macerate for 24 hours, then distil 1 part.

Note.—℥j. is equal to gr. j. of prussic acid.

Aqua amygdalarum amararum dilutum.

Ph. Suecica, 1845.

℞ Concentrated bitter almond water	1 part.
Distilled water	16 ,,

Mix.

Aqua Anethi. *Dill Water.*

Lond. Ph. 1851.

℞ Dill, bruised	℔jss.
Water	Cij.

Let a gallon distil.

Or,

℞ Oil of dill	f ℥ij.
Silex, powdered	℥ij.
Distilled water	Cj.

Carefully rub the oil, in the first place, with the silex, afterwards with the water, and strain the liquor.

Edin. Ph. 1841.

℞ Anethum seeds, bruised	℥xviij.
Water	cong. ij.
Rectified spirit	f℥iij.

Mix together, and distil off one gallon.

Aqua anisi. *Aniseed water.*

May be made as the preceding, substituting anise for dill.

Dubl. Ph. 1850.

℞ Essence of anise	f ℥j.
Distilled water	Css.

Mix with agitation, and filter through paper.

Aqua anisi composita. *Compound aniseed water.*

Lewis's Dispensatory.

℞ Aniseeds,	
Angelica seeds, each	℔ss.
Proof spirit	cong. j.

Water, a sufficient quantity.

Distil 1 gallon.

Aqua asafœtidæ composita. *Compound asafœtida water.*

Ph. Borussica, 1847.

℞ Asafœtida,	
Angelica root,	
Acorus calamas, āā	℥iij.
Rectified spirit sp. gr. ·900,	℥iij.
Water, q. s.	

Distil 6 ounces.

To be kept in well-closed bottles. It will be turbid.

Aqua bryoniæ composita. *Compound bryony water. Hysteric water.*

℞ Bryony root	℔j.
Wild valerian	℥iv.
Pennyroyal,	
Rue, each	℔ss.

Mugwort leaves,
Feverfew flowers,
Savin tops, each . . ℥j.
Fresh orange-peel,
Lovage seed, each . . ℥ij.
French brandy . . cong. ijss.

Macerate for four days, and distil two gallons and a half.

Aqua carui. *Caraway water.*

Lond. Ph. 1851.

Prepare this in the same manner as directed concerning dill water.

Dubl. Ph. 1850.

℞ Essence of caraway . . f℥j.
Distilled water. . . . Css.

Mix with agitation, and filter through paper.

Aqua calcis composita. *Compound lime water.*

Dubl. Ph. 1826.

℞ Guaiacum raspings . . . ℔ss.
Liquorice root, cut and bruised ℥j.
Sassafras bark, bruised . . ℥ss.
Coriander seeds . . . . ʒiij.
Lime water . . . . 96 ounces.

Macerate without heat for two days in a closed vessel, occasionally shaking it, and then strain.

Aqua cascarillæ. *Cascarilla water.*

Ph. Borussica, 1847.

℞ Cascarilla bark, bruised . . ℔j.
Water. . . . . q. s.

Distil ℔x. It will be limpid.

Aqua cassiæ. *Cassia water.*

Edin. Ph. 1841.

℞ Cassia bark, bruised . . ℥xviij.
Water . . . . . cong. ij.
Rectified spirit. . . . f℥iij.

Mix them together, and distil off 1 gallon.

Aqua Cheltenhamensis artificialis. *Artificial Cheltenham water.*

Ph. Castr. Ruthena, 1840.

℞ Sulphate of soda . . . 120 parts.
Sulphate of magnesia. . 24 ,,
Carbonate of soda, crystallized . . . . 33 parts.
Common salt . . . . 156 ,,
Sulphate of iron . . . 12 ,,

Mix.

Dissolve ʒij in ℔j. of warm water.

Aqua cerasorum amygdalata.

Ph. Borussica, 1847.

℞ Sour cherries, bruised with their stones,
Bitter almonds, bruised, āā . ℔j.
Water. . . . . q. s.

Distil ℔xxiv. It will be slightly turbid at first, but afterwards limpid.

Aqua cinnamomi. *Cinnamon water.*

Lond. Ph. 1851.

Prepare this in the same manner as directed concerning dill water.

Edin. Ph. 1841.

℞ Cinnamon bark, bruised . ℥xviij.
Water . . . . . cong. ij.
Rectified spirit . . . . f℥iij.

Mix, and distil 1 gallon.

Dubl. Ph. 1850.

℞ Essence of cinnamon . . . f℥j.
Distilled water . . . . Css.

Mix with agitation, and filter through paper.

Aqua cinnamomi spirituosa. *Spirituous cinnamon water.*

Ph. Borussica, 1847.

℞ Cinnamon bark, bruised. . ℔j.
Rectified spirit, sp. gr. ·900. ℔ij.
Water . . . . . q. s.

Distil ℔ix. To be carefully kept. It will be first turbid, afterwards limpid.

Aqua cœrulea. *Blue water.*

Ph. Castr. Ruthena, 1840.

℞ Lime water . . . . . ℥viij.
Sal ammoniac . . . . ℈ij.
Acetate of copper, crystallized, gr. iv.

Macerate for 24 hours, and filter through paper.

Aqua Coloniensis spirituosa. *Eau de Cologne.*

Ph. Badensia, 1841.

℞	Oil of neroli	ʒij.
	Oil of orange-peel . . .	℥iss.
	Oil of citron	ʒj.
	Oil of bergamot . . .	ʒvj.
	Oil of lavender,	
	Oil of rosemary, āā . .	ʒss.
	Oil of cinnamon . . .	℈j.
	Cardamoms, powdered,	
	Balsam of Peru, āā . .	ʒij.
	Rectified spirit	℔vij.

Macerate for 10 days, then distil ℔vj. with a gentle heat.

Aqua destillata. *Distilled water.*

Lond. Ph. 1851.

Either solution of lime, or chloride of barium, or nitrate of silver, or oxalate of ammonia, or hydrosulphuric acid being added, it remains clear.

Edin. Ph. 1841.

Take any convenient quantity of spring water; distil it from a proper vessel, rejecting the first twentieth part, and preserving the first half of the remainder.

Dubl. Ph. 1850.

Take of spring or river water, any convenient quantity. Having introduced it into a copper still connected with a block-tin worm, or a Liebig's condenser, draw over about $\frac{1}{10}$ by distillation; this being rejected, continue the process until only about $\frac{1}{5}$ of the original volume of the water remains in the still. Let the distilled water be preserved in well-stopped bottles.

Aqua ferrosa factitia. *Artificial Chalybeate water.*

Ph. Castr. Ruthena, 1840.

℞	Sulphate of iron	ʒss.
	Sugar	ʒiss.

Mix.

℞	Bicarbonate of potash . .	ʒss.
	Sugar	ʒiss.

Mix.

Divide each powder into 12 papers.

Aqua florum aurantii. *Orange flower water. Aqua naphæ. Eau de naphe.*

Lond. Ph. 1836.

℞	Orange flowers	℔. x.
	Proof spirit	f℥vij.
	Water	cong. ij.

Distil 1 gallon.

Lond. Ph. 1851.

It is not coloured by hydrosulphuric acid.

Edin. Ph. 1841.

Note.—Nearly colourless; unaffected by sulphuretted hydrogen.

Aqua naphæ has been said to signify a water distilled from the orange leaf, but it is used as synonymous with orange *flower* water in the French and other foreign Pharmacopœias.

Aqua fœniculi. *Fennel water.*

Lond. Ph. 1836.

℞	Fennel seeds	℔iss.
	Proof spirit	f℥vij.
	Water	cong. ij.

Distil 1 gallon.

Edin. Ph. 1841.

℞	Fennel seeds	℥xviij.
	Rectified spirit . . .	f℥iij.
	Water	cong. ij.

Distil 1 gallon.

Dubl. Ph. 1850.

℞	Essence of fennel . .	f℥j.
	Distilled water . . .	Oss.

Mix with agitation and filter through paper.

Aqua hungarica *Hungary Water.*

The following is the formula preserved in the Imperial Library at Vienna, said to be in the handwriting of Elizabeth, Queen of Hungary (or Landgravine of Thuringia), 1235 :—

"I Elizabeth, Queen of Hungary, being very infirm, and much troubled with the gout in the seventy-second year of my age, used for a year this receipt, given to me by an ancient hermit, whom

I never saw before nor since; and was not only cured, but recovered my strength, and appeared to all so remarkably beautiful, that the King of Poland asked me in marriage, he being a widower and I a widow. I, however, refused him for the love of my Lord Jesus Christ, from one of whose angels I believe I received the remedy. The recipe is as follows:—

"℞ Aqua vitæ four times distilled, three parts; and of the tops and flowers of rosemary, two parts.

"Put these together in a close vessel, let them stand in a gentle heat fifty hours, and then distil them. Take ʒj of this in the morning once every week, and let your face and diseased limb be washed with it every morning."

Spirit of rosemary is often sold for Hungary water; but if it be made, as is usual, from the oil of rosemary of commerce, which is seldom genuine, the product will be very inferior to that made from the fresh herb, as directed in the above recipe.

Aqua hyssopi. *Hyssop water.*

Distilled from the fresh leaves of hyssop. This was ordered in the Edin. Ph. 1722.

Aqua hydrargyralis simplex. *Eau mercurielle simple. Simple mercurial water.*

Soubeiran's Trait. Pharm. 1847.

℞ Mercury	1
Water	2

Boil for two hours in a glass matrass; separate the water by decantation. It was for a long time believed that the water could take nothing from the mercury; but the experiments of Wiggers have proved that a part of the metal is dissolved. To establish its presence we must add to the mercurial water a little nitric acid, and concentrate. The mercury is changed into nitrate, the presence of which is detected by re-agents. I repeated this experiment, and obtained the same result as Wiggers. I rendered it more manifest by replacing the nitric acid by chlorine, keeping them in contact for 24 hours, adding a little sal ammoniac, and evaporating. M. Paton could not detect mercury by Wiggers' process: this, however, arises from the quantity of this metal being very small, and from the sulphuret of mercury which forms in the nitric liquor frequently not separating till it is heated.

Use.—Vermifuge. Its effects would probably be more certain if a bitter vegetable infusion were employed to make the decoction.

Aqua kreosoti. *Kreosote water.*

Ph. Borussica, 1847.

℞ Kreosote	ʒiss.
Distilled water	℥xxv.

Shake them together, and keep the solution in a well-stopped bottle. It will be slightly turbid.

Aqua lauro-cerasi. *Cherry-laurel water.*

Edin. Ph. 1841.

℞ Fresh leaves of cherry-laurel	℔j.
Water	Oijss.
Compound spirit of lavender	ʒj.

Chop down the leaves, mix them with the water, distil off 1 pint, agitate the distilled liquid well, filter it if any milkiness remain after a few seconds of rest, and then add the lavender spirit.

Dubl. Ph. 1850.

℞ Fresh leaves of the common laurel	℔j.
Water	Oijss.

Upon the leaves, chopped, and crushed in a mortar, macerate the water for 24 hours, and then draw over a pint of liquid by distillation, using a Liebig's condenser, and chloride of zinc bath. Filter the product through paper, and preserve it in a well-stopped bottle.

Ph. Castr. Ruthena, 1840.

℞ Cherry-laurel leaves, fresh and pounded	℔ij.
Water	℔vj.
Rectified spirit	ʒiij
Macerate for a short time, then distil	℔iij.

To be kept in a cool and dark place. Dose from 10 to 30 drops.

Aqua lavandulæ. *Lavender water.*

The compound sold under this name would be more correctly called spirit of lavender.

No. 1.

℞ Fresh picked lavender flowers	℔vj.
Rectified spirit	℔xviij.

Macerate for two days, and then distil with the heat of a water-bath.

It is generally and more advantageously made by adding the essential oil to spirit.

No. 2.

℞ English oil of lavender . .	f℥j.
Rectified spirit	f℥xv.

Mix.

Other essential oils or essences are often added with the view of improving the scent.

No. 3.

℞ English oil of lavender . .	f℥j.
Essence of ambergris and musk	f℥ss.
Rectified spirit	f℥xv.

Mix.

No. 4.

℞ English oil of lavender . .	f℥j.
Essence of ambergris and musk	f℥ss.
Eau de Cologne . . .	f℥viij.
Rectified spirit	f℥xvj.

Mix.

No. 5.

℞ English oil of lavender .	f℥iv.
Essence of musk . . .	℥ij.
Oil of bergamot . . .	℥xss.
Oil of cloves	℥v.
Otto of roses	℥j.
Oil of origanum . . .	℥ss.
Oil of rosemary . . .	℥ss.
Rectified spirit	Ox.
Water	Oij.

Mix.

It is necessary to have pure spirit, free from smell, and the very best essential oils, and essences, in order to make good lavender water.

Aqua mellis. *Honey water.*

A sweet-scented spirit distilled from some aromatic substances, together with honey, has long been sold under this name. The following is an old formula for it:—

No. 1.

℞ Coriander seeds . . .	℔ij.
Fresh lemon-peel . . .	℥viij.
Bruised nutmegs . . .	℥viij.
Orris root, sliced . . .	℥iv.
Rectified spirit . .	cong. ijss.
Water	cong. iij.

Macerate for three days, and then distil 3 gallons with the heat of a water-bath. To the distilled spirit add,

Oil of lavender	℥ss.
Oil of rosemary . . .	℥ss.
Rose water	Oiij.
Orange-flower water . .	Oij.
Honey	℥j.
Tincture of musk . . .	℥j.

Tincture of saffron, sufficient to give it the proper colour.

The foregoing has been simplified and greatly improved in the following, which is a good formula:—

No. 2.

℞ Rectified spirit	Oviij.
Rose water	Oij.
Orange-flower water . .	Oij.
Oil of cloves	℥ss.
Oil of lavender	℥ss.
Oil of bergamot . . .	℥ij.
Oil of yellow sandal-wood .	ʒj,
Honey	℥j.
Tincture of saffron .	℥j. or q. s.
Musk	gr. x.

Macerate for a week, and filter.

Aqua melissæ. *Eau de melisse des carmes. Balm water. Carmelite water.*

This celebrated spirit was first made by an order of nuns called Carmelites; but although the process was kept as secret as possible, several formulæ have been published for its preparation. The following is a good one:—

No. 1.

℞ Dried balm leaves . . .	℥iv.
Dried lemon-peel . . .	℥ij.
Nutmegs,	
Coriander fruit, each . .	℥j.
Cloves,	
Cinnamon,	
Angelica root, each . .	℥ss.
Rectified spirit	℔ij.
Brandy	℔ij.

Macerate for three days; distil by the heat of a water-bath; and afterwards keep the distilled product for some time in a cold cellar.

The following formula has been published as that employed at the *Convent du Faubourg-Saint-Germain*:—

No. 2.

℞ Fresh balm leaves .	3 handfuls.
Fresh lemon-peel,	
Nutmegs,	
Coriander seeds,	
Cloves,	
Cinnamon, each . .	℥j.
Best white wine,	
Rectified spirit, each .	℔ij.

Macerate for twenty-four hours, and then distil ℔ij. by the heat of a sand-bath.

Aqua melissæ concentrata. *Concentrated melissa water.*

Codex Medic. Hamburg, 1845.

℞ Common balm (Melissa officinalis)	℔x.
Rectified spirit . . .	℔j.
Water	℔lxxx.

Distil the above ingredients in a steam apparatus as long as the distilled liquor has an agreeable odour. To the distilled liquor add a fresh portion of the herb, and again distil; and repeat this until the distilled liquor is saturated with essential oil. To be made in July.

Common melissa water is made by diluting the above with 10 parts of water.

Aqua menthæ piperitæ. *Peppermint water.*

Lond. Ph. 1851.

℞ Peppermint, dried . . .	℔ij.
Water	Cij.

Let a gallon distil. If the fresh herb be employed, double the weight is to be used.

This water can be prepared more readily from the oil of peppermint, in the same manner as water of dill.

Edin. Ph. 1841.

℞ Fresh peppermint . . .	℔iv.
(Or of the dried . . .	℔ij.)
Water	cong. ij.
Rectified spirit	f℥iij.

Distil a gallon.

Dubl. Ph. 1850.

℞ Essence of peppermint .	f℥j.
Distilled water	Css.

Mix with agitation, and filter through paper.

Aqua pulegii. *Pennyroyal water.*

Lond. Ph. 1851.

Prepare this in the same manner as the water of peppermint is directed to be prepared.

Aqua menthæ pulegii.

Dubl. Ph. 1850.

℞ Essence of pennyroyal . .	f℥j.
Distilled water	Css.

Mix with agitation, and filter through paper.

Aqua menthæ pulegii composita. *Aqua Pulegii Composita. Pennyroyal and hysteric water.*

This is a common remedy among the lower classes in some localities.

℞ Pennyroyal water . .	2 parts.
Compound bryony or hysteric water . . .	1 part.

Mix.

Aqua menthæ viridis. *Spearmint water. Mint water.*

Lond. Ph. 1851.

Prepared as peppermint water.

Edin. Ph. 1841.

Prepared as peppermint water.

Dubl. Ph. 1850.

℞ Essence of spearmint . . f℥j.
Distilled water . . . . Css.

Mix with agitation, and filter through paper.

Aqua opii. *Opium water.*

Ph. Borussica, 1847.

℞ Opium, sliced and dried . ℥j.
Water . . . . . ℥xij.

Distil ℥vj from a glass retort.

To be kept in a well-closed bottle. It will be limpid, colourless, and will have a faint smell.

Aqua phagedænica. *Phagedenic water.*

Ph. Borussica, 1847.

℞ Bichloride of mercury . gr. xxiv.
Lime water . . . . ℥xvj.

Mix. The precipitate is to be mixed with the supernatant liquor when it is dispensed.

Aqua picis liquidæ. *Tar water.*

Dubl. Ph. 1826.

℞ Tar . . . . . Oij.
Water . . . . . cong. j.

Stir them together with a stick for a quarter of an hour; when the tar has subsided, strain the liquor, and keep it in well-stopped bottles.

Aqua pimentæ. *Pimenta water.*

Lond. Ph. 1851.

℞ Pimenta, bruised . . . ℔j.
Water . . . . . Cij.

Let a gallon distil.

This water can be prepared more readily from the oil of pimenta in the same manner as water of dill.

Edin. Ph. 1841.

℞ Pimenta, bruised . . . ℔j.
Water . . . . . cong. ij.
Rectified spirit . . . . f℥iij.

Mix them, and distil one gallon.

Dubl. Ph. 1850.

℞ Essence of pimenta . . f℥j.
Distilled Water . . . Css.

Mix with agitation, and filter through paper.

SYNONYME.

Aqua Piperis Jamaicensis. Lond. Ph. 1746.

Aqua raphani composita. *Compound horseradish water.*

Lond. Ph. 1746.

℞ Fresh garden scurvygrass leaves . . . . . ℔iv.
Fresh horseradish root, Fresh orange-peel, each . . ℔ij.
Nutmegs . . . . . ℥ix.
Proof spirit . . . . . cong. ij.
Water, a sufficient quantity.

Distil 2 gallons.

Aqua rosæ. *Rose water.*

Lond. Ph. 1851.

℞ The hundred-leaved Rose . ℔x.
Water . . . . . Cij.

Let a gallon distil.

Edin. Ph. 1841.

℞ Petals of Rosa centifolia . ℔x.
Water . . . . . cong. ij.
Rectified spirit . . . . f℥iij.

Mix them, and distil off one gallon. The petals should be preferred when fresh; but it also answers well to use those which have been preserved by beating them with twice their weight of muriate of soda.

Dubl. Ph. 1850.

℞ Essential oil of Roses . . ♏xx.
Distilled Water . . . Css.

Mix with agitation, and filter through paper.

Aqua sambuci. *Elder water.*

Lond. Ph. 1851.

℞ Elder . . . . . ℔x.
Water . . . . . Cij.

Let a gallon distil.

Edin. Ph. 1841.

℞ Fresh elder flowers. . . lbx.
Water . . . . . cong. ij.
Rectified spirit . . . . fʒiij.

Mix them, and distil off one gallon.

Aqua sambuci concentrata. *Concentrated Elder-flower water.*

Distil the best picked elder flowers with water as long as the distilled product smells strongly of the flowers. Two or three gallons may be thus drawn from ten pounds of fresh flowers. To the distilled water add three pints of best rectified spirit, and submit the mixture to distillation, collecting six pints of distilled product. One ounce of this added to five ounces of water will form good elder-flower water.

Aqua tiliæ florum. *Lime-flower water.*

Ph. Badensia, 1841.

℞ Lime flowers . . . 2 parts.
Water . . . . . q. s.

Distil 20 parts.

Aqua vulneraria. *Eau d'Arquebusade. Arquebusade water.*

This has been a celebrated application for contusions, for resolving coagulated blood or tumours, and for cleaning and healing ulcers and wounds. It was originally prepared from a great number of ingredients. Formulæ for its preparation are given in some of the old continental pharmacopœias. The following, although not an authorized formula, is more simple, and answers better than those above alluded to:—

℞ Dried mint,
Dried Angelica tops, each lbj.
Dried wormwood . . lbss.
Angelica seeds . . . ʒv.
Oil of juniper . . . ʒss.
Spirit of rosemary . . Oiijss.
Rectified spirit . . . cong. v.
Water . . . . . cong. iv.

Mix, and distil six gallons.

Aqua zinci sulphatis cum camphora. *Aqua vitriolica camphorata. Camphorated white vitriol water.*

Lond. Ph. 1646.

℞ Sulphate of zinc. . . ʒss.
Camphor . . . . ʒij.
Boiling water . . . lbij.

Mix until the sulphate of zinc is dissolved; then filter.

Aquæ minerales. *Mineral waters.*

This term is applied to spring waters which contain such mineral constituents in solution as are capable of rendering them efficient medicinal agents. Formulæ have been published for the artificial production of some of these waters, and these are called *Artificial mineral waters.* The following formulæ represent the composition of some of the natural and artificial waters of this class.

Aix-la-Chapelle water.

Natural.

Contains,

Chloride of sodium . . .	46 grs.
Carbonate of soda, dry .	8 grs.
Sulphate of soda, dry . .	3½ grs.
Carbonate of lime . . .	2 grs.
Carbonate of magnesia. .	½ gr.
Silica	¼ gr.
Nitrogen gas . . .	undetermined.
Carbonic acid gas . . .	15 cub. in.
Sulphuretted hydrogen .	10 cub. in.
Water	2 pints.

Artificial.

℞ Pure water.	2 galls.
Carbonic acid	4 galls.
Sulphuretted hydrogen .	⅓ gall.
Chloride of sodium . .	423 grs.
Bicarbonate of soda . .	177 grs.
Sulphate of soda, cryst. .	90 grs.
Chloride of calcium . .	45 grs.
Chloride of magnesium .	12 grs.

Dissolve the sulphuretted hydrogen in its own volume of the water. Dissolve the salts in the remainder of the water

and then charge the solution with the carbonic acid. Divide this latter solution in sixteen bottles; add an equal proportion of the solution of sulphuretted hydrogen to each bottle, and cork it immediately.

Balaruc water. *Eau de balaruc.* (Used only for baths.)

Natural.

Contains,

Carbonic acid	7 cub. in.
Chloride of sodium	115 grs.
Chloride of magnesium	20 grs.
Chloride of calcium	15 grs.
Carbonate of lime	18 grs.
Carbonate of magnesia	1½ gr.
Sulphate of lime	10 grs.
Iron	a trace.
Water	2 pints.

Artificial.

℞ Chloride of sodium	℔iv. ʒiij.
Chloride of calcium	℔iv. ʒiv.
Chloride of magnesium	℔ij. ʒj.
Sulphate of soda	℔j. ʒiv.
Bicarbonate of soda	℔j. ʒviij.
Bromide of potassium	gr. xxiij.
Water	60 galls.

Dissolve the chlorides of calcium and magnesium in part of the water, cold. Dissolve the chloride of sodium and sulphate of soda in the remainder of the water, with heat. Mix the two solutions, and add the bicarbonate of soda and bromide of potassium reduced to fine powder, when the bath will be ready for immediate use.

Bourbonne les bains. (Used only for baths.)

Natural.

Contains,

Chloride of sodium	92 grs.
Chloride of calcium	11 grs.
Sulphate of lime	11 grs.
Carbonate of lime	4 grs.
Bromide of potassium	¾ gr.
Water	2 pts.

Artificial.

℞ Chloride of sodium	℔iv. ʒiij.
Chloride of calcium	℔ij. ʒviij.
Sulphate of soda	℔iv.
Bicarbonate of soda	ʒivss.
Bromide of potassium	230 grs.
Water	60 galls.

Dissolve the chloride of calcium and bicarbonate of soda in one part of the water, cold. Dissolve the other salts in the remaining portion of the water, warm. Mix the two together, and use the bath immediately. (Guibourt.)

Barege water. *Eau de barèges.*

For drinking.

℞ Sulphuret of sodium	31 grs.
Carbonate of soda	31 grs.
Chloride of sodium	31 grs.
Distilled water	2 galls.

To be put into 16 bottles, the corks of which must be fastened down. (Codex.)

For baths.

℞ Sulphuret of sodium	986 grs.
Carbonate of soda	986 grs.
Chloride of sodium	986 grs.
Distilled water	Oij.

Dissolve.

This solution is to be mixed with 60 gallons of water to form a bath. (Codex.)

The above waters may be used for those of *Cauterets*, *Bagneres de Luchon*, *Bonne*, and *Saint Sauveur*.

Carlsbad water. *Eau de Carlsbad.*

Natural.

Contains,

Carbonate of soda	7·27 grs.
Carbonate of lithia	·15 gr.
Carbonate of strontia	·005 gr.
Carbonate of magnesia	1·02 gr.
Carbonate of iron	·02 gr.
Carbonate of lime	1·77 gr.
Carbonate of manganese	·004 gr.
Chloride of sodium	5·98 grs.
Silica	·43 gr.
Subphosphate of lime	·001 gr.
Subphosphate of alumina	·001 gr.

Sulphate of soda	14·901 grs.
Fluoride of calcium	·018 gr.
Water	1 pound.
Carbonic acid 58 grs. in 100 cubic in.	
Temperature 145° Fahr. (Berzelius.)	

Artificial.

℞ Sulphate of soda, cryst.	669 grs.
Carbonate of soda, do	862 grs.
Chloride of sodium	104 grs.
Chloride of calcium, cryst.	103 grs.
Sulphate of magnesia	164 grs.
Water	2 galls.

Dissolve the salts of soda, the chloride of calcium, and the sulphate of magnesia, separately, in as much water as is required; filter the solutions; mix them; add the remainder of the water, and charge the solution with five volumes of carbonic acid. (Guibourt.)

Carrara water. *Carbonated lime water.*

A patent has been taken out for an aërated water, which is made by condensing carbonic acid gas into a solution of lime in water; the carbonate of lime first formed is re-dissolved by the excess of carbonic acid. This water is used in calculous complaints.

Chalybeate water, aerated.

℞ Citrate of iron	gr.xiij.
Syrup of lemon (or other syrup)	f℥ss.
Water	f℥vss.

Mix, and charge the solution with carbonic acid gas.

Cheltenham water. (*Chalybeate spring.*)

Natural.

Contains,

Carbonate of soda	·5 gr.
Sulphate of soda	22·7 grs.
Sulphate of magnesia	6· grs.
Sulphate of lime	2·5 grs.
Chloride of sodium	41·3 grs.
Oxide of iron	·8 gr.
Water	1 pint.
Carbonic acid	2½ c. in.

(Brande.)

Artificial.

℞ Bicarbonate of soda	5 grs.
Sulphate of soda, cryst.	50 grs.
Sulphate of magnesia, cryst.	13 grs.
Chloride of calcium	4 grs.
Chloride of sodium	42 grs.
Protosulphate of iron	2 grs.
Water	1 pint.
Carbonic acid	2½ c. in.

Dissolve the salts in the water, and charge with the carbonic acid.

Cheltenham water. (*Pure saline spring.*)

Natural.

Contains,

Sulphate of soda	15 grs.
Sulphate of magnesia	11 grs.
Sulphate of lime	4·5 grs.
Chloride of sodium	50 grs.
Water	1 pint.

(Brande.)

Artificial.

℞ Sulphate of soda, cryst.	34 grs.
Sulphate of magnesia, cryst.	23 grs.
Chloride of sodium	50 grs.
Water	1 pint.

Dissolve.

The salts mentioned in the above formula are sometimes sold as "*Cheltenham salts.*"

Cheltenham water. (*Sulphur spring.*)

Natural.

Contains,

Sulphate of soda	23·5 grs.
Sulphate of magnesia	5· grs.
Sulphate of lime	1·2 gr.
Chloride of sodium	35· grs.
Oxide of iron	·3 gr.
Water	1 pint.
Carbonic acid	1½ c. in.
Sulphuretted hydrogen	2½ c. in.

(Brande.)

Artificial.

℞ Bicarbonate of soda	20 grs.
Sulphate of soda, cryst.	30 grs.
Sulphate of magnesia, cryst.	10 grs.

Chloride of sodium	35 grs.
Sulphuret of sodium	10 grs.
Water	1 pint.

Dissolve.

CONTREXEVILLE WATER. *Eau de Contrexeville.*

Natural.

Contains,

Chloride of sodium	0·081 gm.
Sulphate of magnesia	0·027 gm.
Sulphate of lime	0·271 gm.
Carbonate of iron	0·027 gm.
Carbonate of lime	0·013 gm.
Carbonic acid, a small quantity.	
Water	1 litre.

Artificial.

℞ Chloride of sodium	6 grs.
Protochloride of iron	4½ grs.
Chloride of calcium, cryst.	4½ grs.
Bicarbonate of soda	9 grs.
Sulphate of magnesia	4 grs.
Sulphate of lime	40 grs.
Water	2 galls.
Carbonic acid	4 galls.

Dissolve the salts in the water, and charge the solution with the carbonic acid. (Guibourt.)

HARROWGATE CHALYBEATE WATER.

Natural.

Contains,

Chloride of sodium	300·4 grs.
Chloride of calcium	22· grs.
Chloride of magnesium	9·9 grs.
Sulphate of lime	1·86 gr.
Carbonate of lime	6·7 grs.
Carbonate of magnesia	·8 gr.
Oxide of iron	2·4 grs.
Silica	0·4 gr.
Water	1 gall.

(Scudamore.)

Artificial.

℞ Chloride of sodium	250 grs.
Chloride of calcium, cryst.	46 grs.
Chloride of magnesium, cryst.	22 grs.
Sulphate of soda	2 grs.
Bicarbonate of soda	45 grs.
Protochloride of iron	8 grs.
Water	1 gall.

Dissolve the bicarbonate of soda in half the water, and the other salts in the remainder, and mix the two solutions.

HARROWGATE SULPHUR WATER.

Natural.

Contains,

Chloride of sodium	735 grs.
Chloride of calcium	71·5 grs.
Chloride of magnesium	43 grs.
Bicarbonate of soda	14·75 grs.
Sulphuretted hydrogen	6·4 c. in.
Carbonic acid	5·25 c. in.
Nitrogen gas	6·5 c. in.
Carburetted hydrogen	4·65 c. in.
Water	1 wi. gall.

Artificial.

℞ Chloride of sodium	500 grs.
Chloride of calcium, cryst.	150 grs.
Chloride of mag., cryst.	90 grs.
Bicarbonate of soda	250 grs.
Sulphuret of sodium	120 grs.
Water	1 wine gall.

Dissolve the sulphuret of sodium in half the water, and the other salts in the remainder, then mix the two solutions.

LEAMINGTON WATER. (Sulphur.)

Natural.

Contains,

Chloride of sodium	15 grs.
Chloride of calcium	7·96 grs.
Chloride of magnesium	3·30 grs.
Sulphate of soda	11·60 grs.
Oxide of iron	a trace.
Sulphuretted hydrogen, undetermined.	
Water	1 pint.

(Scudamore.)

Artificial.

℞ Chloride of sodium	96 grs.
Chloride of calcium, cryst.	45 grs.
Chloride of mag., cryst.	34 grs.
Sulphate of soda, cryst.	13 grs.
Water	f℥xxviij.
Sulphuretted hydrog. water	f℥iv.

Dissolve the salts in the water, and add the sulphuretted hydrogen water to the solution.

Magnesia water. *Solutio Magnesiæ carbonatis.*

No. 1.

℞ Carbonate of magnesia recently precipitated	ʒiij. ʒij. ℈ij.
Water	1 gallon.
Carbonic acid	187 cub. in.

No. 2.

℞ Carbonate of magnesia recently precipitated	ʒvj. ʒv. ℈j.
Water	1 gallon.
Carbonic acid	287 cub. in.

Diffuse the carbonate of magnesia, in its moist and recently precipitated state, through the water, and then charge it with the carbonic acid.

Mont-dore water. *Eau de Mont-dore.*

Natural.

Contains,

Bicarbon. of soda	7 gramm.
Chloride of sodium	4 gramm.
Sulphate of soda, cryst.	1·5 gramm.
Carbonate of lime	1·6 gramm.
Carbonate of magnesia	0·6 gramm.
Silica	2 gramm.
Peroxide of iron	0·1 gramm.
Water	10 litre.
Carbonic acid	undetermined.

Artificial.

℞ Sulphate of soda, cryst.	17 grs.
Chloride of sodium	20 grs.
Chloride of magnesium	18 grs.
Protosulphate of iron	5 grs.
Bicarbonate of soda	169 grs.
Chloride of calcium	54 grs.
Water	2 galls.
Carbonic acid	10 galls.

Dissolve the salts in the water, and charge the solution with the carbonic acid.

Naples water.

Artificial.

℞ Carbonate of soda, cryst.	24 grs.
Carbonate of magnesia	13 grs.
Water	f ʒxxviij.
Carbonic acid gas	5 vols.
Sulphuretted hydrogen water,	f ʒiv.

Add the carbonates of soda and magnesia to the water, and charge with the carbonic acid. Then add the sulphuretted hydrogen water, in the bottle, and cork immediately.

Passy water. *Eau de Passy.*

Natural.

Contains,

Sulphate of lime	43·20 grs.
Protosulphate of iron	17·24 grs.
Sulphate of magnesia	22·60 grs.
Chloride of sodium	6·60 grs.
Alumina	7·50 grs.
Carbonate of iron	0·80 gr.
Carbonic acid, Bituminous matter	in small quantity.
Water	2 lbs.

Artificial.

℞ Sulphate of lime	35 grs.
Protosulphate of iron	17 grs.
Sulphate of magnesia	18 grs.
Chloride of sodium	5 grs.
Alum	6 grs.
Water	2 pts.

Dissolve.

Provins water. *Eau de Provins.*

Natural.

Contains,

Carbonate of lime	5·54 gramm.
Carbonate of iron	1·11 gramm.
Carbonate of magnesia	0·83 gramm.
Carbonate of manganese	0·22 gramm.
Silica	0·25 gramm.
Chloride of sodium	0·42 gramm.
Water	10 litre.
Carbonic acid	5 litre.

Artificial.

℞ Chloride of calcium	184 grs.
Sulphate of magnesia	34 grs.

Dissolve in a sufficient quantity of water, and add solution of carbonate of soda as long as any precipitate is formed.

Collect and wash the precipitate, to which add—

Bicarbonate of soda	30 grs.
Protochloride of iron	18 grs.
Protochloride of manganese	6 grs.
Water	2 galls.

Charge the solution with 5 volumes of carbonic acid gas.

Pullna water. *Eau de Pullna.*

Natural.

Contains,

Sulphate of magnesia	33·55 gramm.
Sulphate of soda	21·88 gramm.
Chloride of sodium	3 gramm.
Chloride of magnesium	1·86 gramm.
Sulphate of lime	1·18 gramm.
Carbonate of magnesia	0·54 gramm.
Carbonate of lime	0·01 gramm.
Cabonate of iron	0·001 gramm.
Organic matter	0·40 gramm.
Water	1 litre.

Artificial.

℞ Sulphate of soda, cryst.	3717 grs.
Sulphate of magnesia	5168 grs.
Chloride of magnesium	723 grs.
Chloride of calcium	231 grs.
Chloride of sodium	231 grs.
Bicarbonate of soda	150 grs.
Water	2 galls.
Carbonic acid	10 galls.

Dissolve the salts in the water, and charge the solution with the carbonic acid. (Guibourt.)

Pyrmont water. *Eau de Pyrmont.*

Natural.

Contains,

Carbonate of lime	4·77 grs.
Protocarbon. of manganese	·03 gr.
Protocarbonate of iron	·32 gr.
Subphosphate of alumina	·01 gr.
Sulphate of potassa	·03 gr.
Sulphate of soda	1·60 gr.
Sulphate of lithia	·006 gr.
Sulphate of lime	5·02 grs.
Sulphate of strontia	·01 gr.
Sulphate of magnesia	2·36 grs.
Chloride of magnesium	·84 gr.
Silica	·37 gr.
Water	1 ℔.
Carbonic acid	1½ vol. (Struve.)

Artificial.

℞ Carbonate of lime	12 grs.
Carbonate of soda, cryst.	31 grs.
Sulphate of soda, cryst.	7¼ grs.
Sulphate of lime	14 grs.
Sulphate of magnesia	20 grs.
Sulphate of iron	2 grs.
Chloride of sodium	2 grs.
Chloride of magnesium	4 grs.
Chloride of manganese	$\frac{1}{27}$ grs.
Water	2 pts.
Carbonic acid	5 vols.

Dissolve the sulphate of iron in part of the water. Dissolve the other soluble salts in the remainder of the water. Add the insoluble salts to the solution, and charge it with the carbonic acid. Then mix the two solutions in a bottle and cork it immediately. (Soubeiran.)

Sea water.

Artificial.

No. 1.

℞ Chloride of sodium	409 grs.
Chloride of magnesium, dry	79 grs
Chloride of calcium, dry	19 grs.
Sulphate of soda, dry	71 grs.
Water	℔ij. ℥viij.

Dissolve. (Guibourt.)

No. 2.

℞ Bay salt	409 grs.
Sulphate of soda, cryst.	180 grs.
Chloride of calcium, cryst.	37 grs.
Chloride of magnesium, cryst.	151 grs.
Water	f℥xxxv

Dissolve. (Soubeiran.)

Seidchutz water.

Natural.

Contains,	Grains.
Carbonate of lime	5·10
Carbonate of magnesia	·82
Protocarbonate of manganese	·003

Protocarbonate of iron	·009
Subphosphate of lime	·01
Subphosphate of alumina	·008
Sulphate of potassa	3·67
Sulphate of soda	17·62
Sulphate of lime	1·12
Sulphate of strontia	·03
Sulphate of magnesia	62·35
Nitrate of magnesia	5·93
Chloride of magnesium	1·22
Silica	·09
Water	1 pound.
Carbonic acid gas	1-fifth volume (Struve.)

Artificial.

℞ Sulphate of magnesia	320 grs.
Chloride of calcium, cryst.	9 grs.
Sulphate of lime	14 grs.
Carbonate of lime	21 grs.
Carbonate of magnesia	45 grs.
Water	f℥xxxv.
Carbonic acid	5 volumes.

Mix the salts with the water, and charge it with the carbonic acid.

Seidlitz water. *Eau de Seidlitz.*

Natural.

Contains,	Grammes.
Sulphate of magnesia	10·36
Chloride of magnesium	·13
Carbonate of magnesia	·02
Sulphate of soda	2·27
Sulphate of potash	·57
Sulphate of lime	·53
Carbonate of lime	·70
Carbonate of strontia	·008
Carbonate of iron, Carbonate of manganese, Alumina, Silica	·007
Carbonic acid.	
Water	1 litre.

Artificial.

No. 1.

℞ Sulphate of magnesia	123 grs.
Water	f℥xxxv.
Carbonic acid	3 volumes.

Dissolve the salt in the water, and charge the solution with the carbonic acid.

No. 2.

℞ Sulphate of magnesia	246 grains.
Water	f℥xxxv.
Carbonic acid	3 volumes.

Mix as above.

No. 3.

℞ Sulphate of magnesia	369 grains.
Water	f℥xxxv.
Carbonic acid	3 volumes.

Mix as above.

Seltzer water. *Eau de Seltz.*

Natural.

Contains,		
Carbonate of soda	4·61	grs.
Carbonate of baryta	·001	gr.
Carbonate of strontia	·01	gr.
Carbonate of lime	1·40	gr.
Carbonate of magnesia	1·50	gr.
Subphosphate of lime	·0007	gr.
Subphosphate of alumina	·002	gr.
Sulphate of potassa	·29	gr.
Chloride of potassium	·26	gr.
Chloride of sodium	12·96	grs.
Fluoride of calcium	·001	
Silica	·22	
Water	1 pound.	
Carbonic acid	1¼ volume. (Struve.)	

Artificial.

No. 1.

℞ Chloride of calcium, cryst.	134 grs.
Chloride of magnesium, do.	216 grs.
Bicarbonate of soda	350 grs.
Chloride of sodium	190 grs.
Water	2 gallons.
Carbonic acid	5 volumes.

Dissolve the salts in the water, and charge the solution with the carbonic acid. (Guibourt.)

No. 2.

℞ Chloride of calcium, cryst.	7 grs.
Chloride of magnesium, cr.	6½ grs.
Carbonate of soda, cryst.	19 grs.
Chloride of sodium	24 grs.
Sulphate of iron	¼ gr.
Sulphate of soda	1 gr.
Phosphate of soda	16 grs.
Water	f℥xxxv.
Carbonic acid	5 volumes.

Mix as above.

Soda water.

The aërated water sold under this name is usually either a solution of bicarbonate of soda, with excess of carbonic acid, or merely water into which carbonic acid gas has been condensed. The latter is sometimes distinguished as *Single soda water*, and the former as *Double soda water*. Some of the cheap "Soda water" met with in commerce has been found to contain neither soda nor carbonic acid, being made by condensing atmospheric air into common water, by means of a forcing pump.

Spa water. (*Pouhon.*)

Natural.

Contains,

Carbonate of soda	·55 gr.
Carbonate of lime	·73 gr.
Carbonate of magnesia	·84 gr.
Protocarbonate of manganese	·03 gr.
Protocarbonate of iron	·28 gr.
Subphosphate of lime	·01 gr.
Subphosphate of alumina	·006 gr.
Sulphate of potassa	·05 gr.
Sulphate of soda	·02 gr.
Chloride of sodium	.33 gr.
Silica	·37 gr.
Water	1 pound.
Carbonic acid	$1\frac{1}{3}$ volume.

(Struve.)

Artificial.

No. 1.

℞ Chloride of calcium, cryst.	$26\frac{1}{2}$ grs.
Sulphate of magnesia	14 grs.
Protochloride of iron	$15\frac{1}{2}$ grs.
Bicarbonate of soda	45 grs.
Water	2 gallons.
Carbonic acid	5 volumes.

Decompose the chloride of calcium and sulphate of magnesia, separately, with carbonate of soda; collect and wash the precipitates, which add to the bicarbonate of soda and protochloride of iron dissolved in the water, and charge the solution with the carbonic acid.

No. 2.

℞ Carbonate of soda, cryst.	6 grs.
Carbonate of lime	$\frac{1}{2}$ gr.
Carbonate of magnesia	$\frac{1}{4}$ gr.
Protochloride of iron	1 gr.
Alum	$\frac{1}{8}$ gr.
Water	$f\frac{z}{3}$xxxv.
Carbonic acid	5 volumes.

Mix the salts with the water, and charge with the carbonic acid. (Codex.)

Vichy water. *Eau de Vichy.*

Natural.

Contains,

	Grammes.
Carbonate of soda, dry	38·13
Sulphate of soda, do	2·79
Chloride of sodium, do	5·58
Carbonate of lime	2·86
Carbonate of magnesia	·45
Peroxide of iron	·06
Silica	·45
Water	10 litre.
Carbonic acid	11·49 litre.

Artificial.

℞ Bicarbonate of soda	1018 grs.
Sulphate of soda, cryst.	70 grs.
Chloride of sodium	35 grs.
Chloride of calcium	95 grs.
Sulphate of magnesia	15 grs.
Protosulphate of iron	3 grs.
Water	2 gallons.
Carbonic acid	5 volumes.

Dissolve the salts in the water, and charge the solution with the carbonic acid.

Wick chalybeate water. Brighton.

Natural.

Contains,

Sulphate of iron	1·66 grs.
Sulphate of lime	1·78 grs.
Muriate of lime	1.71 grs.
Muriate of magnesia	·44 grs.
Muriate of soda	1·36 grs.
Carbonate of iron	·13 grs.
Carbonic acid	2 c. in.
Water	1 pint.

Artificial.

℞ Sulphate of iron	gr. iss.
Chloride of calcium	gr. iij.
Sulphate of magnesia	gr. j.
Bicarbonate of soda	gr. iij.
Water	Oj.

Mix.

Archil. *Orchil.*

A coloured liquid obtained by macerating the Rocella tinctoria in an ammoniacal liquor. Urine and lime were formerly used, and probably are still, to a certain extent, in making archil. There are two kinds of archil sold, blue and red, the difference in which depends upon slight variations in the preparation. It is principally used for dyeing and staining wood.

Argentum. *Silver.*

This substance is found in the mineral kingdom in various states; sometimes nearly pure, or alloyed with other metals. The processes followed for the extraction of silver vary in different places, according to the nature of the ore—they are principally *amalgamation* and *cupellation.*

Silver is totally dissolved by diluted nitric acid. This solution, on the addition of chloride of sodium, throws down a precipitate, which an excess of ammonia dissolves, and it should be free from colour. The chloride of silver being removed, and hydrosulphuric acid being added to the solution, it is not coloured by it, and nothing is thrown down. The specific gravity of silver is 10·4.—Lond. Ph. 1836.

Soluble entirely in diluted nitric acid: this solution, treated with an excess of muriate of soda, gives a white precipitate entirely soluble in aqua ammoniæ, and a fluid which is not affected by sulphuretted hydrogen. Edin. Ph. 1841.

Argenti chloridum. *Chloride of Silver.* Ag Cl.

This is obtained by precipitating a solution of nitrate of silver by pure hydrochloric acid, and washing the precipitate. Chloride of silver is perfectly insoluble in water. Dr. Perri, an American physician, has administered it in epilepsy in doses of one grain, four or five times a day; its effects, he says, are similar to those of the nitrate, but more marked. In chronic dysentery also it has been found, in smaller doses, to diminish the frequency of the stools.

Argenti cyanidum. *Cyanide of silver.* Ag Cy.

Lond. Ph. 1836.

℞ Nitrite of silver . . . ℥ij. and ℥ij.
Diluted hydrocyanic acid,
Distilled water, each Oj.

Dissolve the nitrate of silver in the water, and add to them the diluted hydrocyanic acid, and mix. Wash what is precipitated with distilled water, and dry it.

Note.—By heat it yields cyanogen, and is reduced to silver.

Use.—For preparing the dilute hydrocyanic acid.

SYNONYMES.

Hydrocyanate of silver. Cyanuret of silver. Cyanodide of silver.

Argenti nitras. *Nitrate of silver.* AgO, NO^5.

Lond. Ph. 1836.

℞ Silver . . . . . ℥iss.
Nitric acid . . . . . f℥i
Distilled water . . . . . f℥ij.

Mix the nitric acid with the water, and dissolve the silver in them in a sand-bath. Then gradually augment the heat, that the nitrate of silver may be dried. Dissolve this in a crucible over a slow fire, until, the water having been driven off, the boiling shall have ceased; then pour it immediately into proper moulds.

Note.—At first it is white, but soon becomes black on the admission of light. It is all soluble in water. If copper be put into the solution, the silver is precipitated; the other properties the same as those given under the head, Silver.

Lond. Ph. 1851.

White, it is dissolved in water. This solution throws down silver on copper being inserted. If after 17 grains of nitrate of silver have been added to 6 grains of chloride of sodium dissolved in water, more of the nitrate should be dropped in to the filtered liquor nothing more is thrown down. The access of light to this substance must be prevented.

Edin. Ph. 1841.

℞ Pure silver	℥iss.
Pure nitric acid	f℥j.
Distilled water	f℥ij.

Mix the acid and water, add the silver, and dissolve it with the aid of a gentle heat; increase the heat gradually till a dry salt be obtained; fuse the salt in an earthenware or porcelain crucible, and pour the fused matter into iron moulds previously heated and greased slightly with tallow. Preserve the product in glass vessels.

Note.—Soluble in distilled water, with the exception of a very scanty black powder: twenty-nine grains dissolved in one fluid-ounce of distilled water, acidulated with nitric acid, precipitated with a solution of nine grains of muriate of ammonia, briskly agitated for a few seconds, and then allowed to rest a little, will yield a clear, supernatant liquid, which still precipitates with more of the tests.

Dubl. Ph. 1850.

Argenti nitras fusum.

℞ Refined silver	℥iij.
Pure nitric acid . . .	f℥ij.
Distilled water	℥v.

Place the silver in a flask, and, having poured upon it the acid and water, apply a gentle heat until the metal is dissolved. Transfer the solution to a porcelain capsule, decanting it off a heavy black powder which appears at the bottom of the flask, and having evaporated it to dryness, raise the heat (in a dark room) until liquefaction is produced. Pour the melted nitrate of silver into a brass mould furnished with cylindrical cavities of the size of a goose quill, and which admits of being opened by a hinge, and when the salt has concreted, remove it, and preserve it in well-stopped bottles rendered impervious to light.

Synonyme.—*Lapis infernalis.*

Med. Use.—Internally, tonic and antispasmodic in epilepsy. Dose ⅛th of a grain, gradually increased to one grain. When long taken, it is often deposited in the rete mucosum; so as to give a permanent dark hue to the patient. *Externally,* it is a most powerful escharotic.

Argenti muriatico-ammoniati liquor. *Hydrochlorate of silver and of ammonia.* (Niemann.)

℞ Fused nitrate of silver . .	gr. x.
Distilled water	℥ij.

Filter the solution, and pour gradually into it a solution of chloride of sodium, till no more precipitate is formed. Wash this well, and dissolve it in—

Solution of ammonia. . . .	℥jss.

Add,

Hydrochloric acid	ʒiij.

The quantity of solution should be made up, by the addition of water, to ℥ijss.

Use.—In epilepsy. Dose, 10 drops.

Argenti oxydum. *Oxide of silver.* AgO.

This is generally obtained by adding *Liquor Potassæ* to solution of nitrate of silver, and washing the precipitate. Its colour is a greyish brown.

Dubl. Ph. 1850.

℞ Nitrate of silver	℥ss.
Lime water, Css, or a sufficient quantity.	
Distilled water	Oss.

Dissolve the nitrate of silver in ℥iv of the distilled water, and, having poured the solution into a bottle containing the lime-water, shake the mixture well, and then set it by until the sediment subsides. The supernatant solution being drawn off, let the sediment be placed upon a filter, and, when washed with the remainder of the distilled water, let it be dried at a heat not exceeding 212°, and preserved in a bottle.]

It may also be obtained as follows:—

To a hot solution of nitrate of silver add a hot solution of chloride of sodium as long as any precipitate is thrown down. Collect the precipitate and wash it with hot water.

During the washing it should be broken down with a spatula of platinum, or a

glass rod. The chloride, *still moist*, is covered to about half an inch with a solution of caustic potash, sp. gr. 1·25 at least, and then boiled in a clean iron, silver, or platinum capsule. During the boiling the chloride is to be well stirred, so as to bruise all the lumpy particles. If a small portion, taken out and washed, do not dissolve without residue in dilute nitric acid, the potash is to be decanted off, and the powder, still moist, is to be well rubbed down in a mortar, then returned to the capsule, and again boiled for five minutes with the same or fresh potash. It will now dissolve entirely in nitric acid; if not, a second grinding will complete the process: it is now to be washed. The oxide thus prepared is black.

Med. Use.—It has been given internally in the dose of *half a grain* in epileptic and gastralgic affections. Externally in the form of ointment, consisting of ten grains of oxide to a drachm of lard, it has been applied to venereal sores, and to the urethral membrane, by means of a bougie, in gonorrhœa.

Argol. *Crude tartar. Tararus albus. Tartarus ruber. White or red tartar.*

Impure bitartrate of potash, which is deposited on the sides of the casks during the fermentation of wine. *White argol* is obtained from white wines, and *red argol* from red wines.

Arrack, (African.)

A spirituous liquor, made from the berries of the *Grewia flava*.

Arrack, (China.)

A spirituous liquor, made from the toddy of *Borassus gomutus*, rice and millet.

Arrack, (Indian.)

Made from cocoa-nut toddy and rice. The Batavian (*Kneip*) is esteemed the best; then the Madras: the Goa and Columbo are inferior.

Arrack, (Common Pariah.)

Made from any kind of toddy or jaggery, rendered more intoxicating by adding hemp leaves, the juice of stramonium, and poppy heads.

Arrack, (Mock.) *Mock Arrack. Vauxhall nectar.*

℞ Rum . . . . . Oij.
Benzoic acid . . . . . gr. xx.
Mix.

Arsenicum purum.

Dubl. Ph. 1850.

℞ White oxide of arsenic of commerce, ʒij.

Place the oxide at the sealed end of a hard German glass tube, of about half an inch in diameter and 18 inches long, and having covered it with about 8 inches of dry and coarsely-pulverised charcoal, and raised the portion of the tube containing the charcoal to a red-heat, let a few ignited coals be placed beneath the oxide, so as to effect its slow sublimation. When this has been accomplished, the metallic arsenic will be found attached to the interior of the tube at its distant or cool extremity.

In conducting this process, the furnace used in the performance of an organic analysis should be employed, and the fuel should be ignited charcoal. It will be proper also to connect the open extremity of the tube with a flue, for the purpose of preventing the possible escape into the apartment of arsenical vapours; and, with the view of keeping it from being plugged by the metal, to introduce occasionally into it, as the sublimation proceeds, an iron wire through a cork fixed (but not air-tight) in its open extremity.]

This is a grey brittle metal. Sp. gr. 5·884. It combines in two different proportions with oxygen, forming *arsenious acid*, employed in the preparation of the liquor potassæ arsenitis, and *arsenic acid*. It is entirely sublimed by heat.

Arsenicum flavum. *Yellow arsenic. Yellow sulphuret of ar-*

senic. Tersulphuret of arsenic. King's yellow. Orpiment.

This is found native; it may also be prepared artificially. It consists of 76 parts arsenicum, and 48 parts sulphur. It is used by pyrotechnists, and as a pigment.

ARSENICUM RUBRUM. *Red arsenic. Red sulphuret of arsenic. Realgar. Bisulphuret of arsenic.*

This substance occurs native; yet the commercial realgar is prepared artificially. It is met with in the form of red vitreous masses, or as a red powder. It consists of 76 parts arsenicum and 32 parts sulphur. It is poisonous;—used as a pigment.

ARSENICUM CUM ANTIMONIO. *Arsenic with antimony.*

Med. Chir. Ph.

℞ Sequisulphuret of antimony. . ℥ij.
Arsenious acid. . . . . ℥j.

To be fluxed together in a crucible, and afterwards reduced to a fine powder.

Use.—This, called the *arsenical caustic*, has been used in cases of open cancer. It is found to destroy excrescences, and to remove parts which obstruct the healing of ill-conditioned ulcers. Opium may be added to modify its severity.

ASBESTOS. *Asbestus. Lapis amianthus.*

A mineral substance of a fibrous structure, consisting of silica, magnesia, and a little lime and alumina. There are five varieties:—1. *Amianthus*, which occurs in very long, flexible fibres, of a white, greenish, or reddish colour. 2. *Common asbestos.* Scarcely flexible, and much denser than the former. Found in the Isle of Anglesea, and in Cornwall. 3. *Mountain leather.* The fibres are interwoven so as to become tough. Found in Lanarkshire. 4. *Mountain cork*, or *Elastic asbestos.* It has a similar structure to the preceding. 5. *Mountain wood*, or *Ligniform asbestos.* Massive, of a brown colour, and having the aspect of wood.

ASPHALTUM. *Bitumen judaicum. Jew's pitch.*

A hard, brittle, black, or brown substance, which melts easily with heat, and burns sometimes without leaving any ashes. It is found in a soft state on the surface of the Dead Sea, and becomes hard from long exposure to the air. It is found also in the earth in different parts of the world, in China, Trinidad, and in some parts of Europe. It was formerly employed in medicine, but is now chiefly used for making varnishes and cement.

ASSAFŒTIDA. *Teufelsdreck*, or *Stercus diaboli. Devil's dung. Cibus deorum. Food of the gods.*

A gum-resin obtained from the roots of Narthex assafœtida, and other species of this genus. It has an acrid, bitter taste, and a strong alliacious smell. Although these properties render it exceedingly offensive to many persons, yet among the Asiatics it is frequently used as a condiment for flavouring their sauces and food, and is even eaten alone. It is the produce principally of Persia, and is brought to this country by way of Bombay. Two kinds of assafœtida are met with in commerce, one in lumps, which is more or less mixed with impurities, the other in tears. The fresh-cut surface of assafœtida is at first milk white, or nearly so, but it soon acquires a peach-blossom colour from the action of the air; this colour, however, changes, from further exposure, to a yellowish brown. These changes of colour are more marked in the lump assafœtida, than in that which occurs in tears.

Lond. Ph. 1851.

ASSAFŒTIDA PRÆPARATA. *Prepared Assafœtida.*

Prepare this in the same way as *Prepared Ammoniacum.*

ATROPIA. *Atropine.*

This is the active principle of the *Atropa belladonna*, or Deadly nightshade.

The following process for its preparation has been described by Mr. W. T. Luxton :—

Boil a pound of dry belladonna leaves, with as much distilled water as is sufficient to cover them, for two hours, and then strain off the liquor. Boil the leaves again in the same way with a second portion of water, and mix the strained liquors. Add two drachms of oil of vitriol to the decoction, and when the albumen has separated filter the liquor, which will be of a clear sherry colour. The solution is to be rendered alkaline by passing gaseous ammonia into it, or a lump of sesquicarbonate of ammonia is to be suspended in it, when it acquires a dark colour, and crystals of atropine are slowly deposited. These may be purified by washing them with spirit of ammonia.

Mr. Luxton recommends the use of atropine in combination with nitric acid as a very efficacious application for *Tic-doloreux*. The nitrate is prepared for use by adding two grains of atropine to one minim of strong nitric acid, and one drachm of distilled water. This solution is applied to the affected spot with a camel's-hair brush.

Atropiæ sulphas. *Sulphate of Atropia.*

Lond. Ph. 1851.

℞ Dilute sulphuric acid . . . fʒij.
Atropia ℈vijss, or as much as may be sufficient.
Distilled water . . . . . fʒss.

Gradually add the atropia to the acid mixed with the water, to saturation. Let the solution be strained, and let it evaporate by a gentle heat, that crystals may form. We have intended this salt for external use only.

Aurum. *Gold. Symb.* Au. *Equiv.* 197.

Is found only in the metallic state; commonly alloyed with other metals, as with silver, copper, tellurium, and iron. It occurs in veins in primitive rocks, and is also found in alluvial deposits, in small lumps or particles, called gold-dust.

Aurum divisum. *Divided gold. Powdered gold.*

Triturate gold leaf with ten or twelve times its weight of sulphate of potash, until no shining particles are any longer perceptible; pass the powder through a fine sieve, and then treat it with boiling water, so as to dissolve the sulphate of potash, when the finely-divided gold will remain.

Or it may be done as follows :—

Make an amalgam of 1 part of gold leaf, and 6 parts of quicksilver, by rubbing these together in a mortar; then dissolve out the quicksilver with hot nitric acid, and wash, dry, and pulverise the gold which will remain.

Aurum stanno paratum. *Gold prepared with tin. Purple of Cassius.*

Codex. Ph. Franç. 1839.

℞ Perchloride of gold 10
Distilled water 2000

Dissolve the chloride of gold in the water; take, on the other hand,

Pure tin 10
Nitric acid 10
Hydrochloric acid 20
Distilled water 1000

Dissolve the tin without heat in the mixture of the two acids, and dilute the solution with distilled water.

Then pour the solution of tin into that of gold, in small portions, until a precipitate no longer takes place; allow a deposit to take place, and wash by decantation; filter and dry the precipitate at a very gentle temperature.

Aurum iodidum. *Iodide of Gold.*

Codex, Ph. Franç. 1839.

℞ Chloride of gold . . . 100 parts.
Iodide of potassium . . q. s.

Dissolve the two salts in water separately; pour gradually the solution of iodide of potassium into that of the chloride of gold, until a precipitate is no longer formed. Wash the precipitate with spirit, and dry

it; it should be of a greenish-yellow colour.

Med. Use.—Internally, in venereal affections; dose, $\frac{1}{15}$th to $\frac{1}{10}$th of a grain. Externally, in the form of ointment to venereal ulcers.

Auri murias. *Muriate of gold. Acid chloride of gold. Yellow chloride of gold.*

This is a combination of perchloride of gold with hydrochloric acid. The solution assumes a deep yellow colour, from which the acid chloride of gold crystallizes in long yellow needles. The following formula for the preparation of this salt is taken from the Journal de Pharmacie, July 1, 1844:—

Take *aqua regia*, formed of 3 parts of hydrochloric acid, 1 part of nitric acid, and 1 part of distilled water. Put 1 part of pure gold into a porcelain capsule, and pour over it *aqua regia*, prepared as above; the quantity of acid being double that of the gold employed. Cover the capsule with a plate of glass, and place it on a water-bath, made with a saturated solution of salt; continue the application of heat, taking care to keep the capsule always covered, until the evolution of nitrous vapours has ceased. If the whole of the gold is not dissolved, add a little more *aqua regia*, cover the capsule again as before, and continue the application of heat until the vapours no longer appear. The plate of glass should now be raised, and kept up by a piece of folded blotting paper, and evaporation continued over the water-bath, until on introducing a glass rod into the capsule, and withdrawing it, the chloride of gold, which adheres on cooling, becomes solid. Remove now the capsule from the water-bath, and the chloride will soon crystallize in small prismatic needles, of a fine yellow colour, approaching to orange. The chloride thus obtained is entirely soluble in water, and without reduction. It is employed with much success in fixing the daguerreotype images, and for many other purposes.

Sel d'or. A salt of gold is used in photography, under this name, which is prepared by dissolving chloride of gold in solution of hyposulphite of soda, and crystallizing the product.

Auri perchloridum. *Perchloride of gold, or Terchloride of gold.* ($Au Cl^3$.)

Codex, Ph. Franç. 1839.

℞ Gold in laminæ, 10 parts.
Nitric acid, 10 parts.
Hydrochloric acid, 20 parts.

Dissolve the gold in the mixture of the two acids, conducting the process in a glass or porcelain capsule; apply gentle heat so as to favour the solution; evaporate the liquor, until vapours of chlorine begin to be evolved; allow crystals to form, and promptly enclose them in a well-stoppered bottle.

Chloride of gold is in the form of small crystalline needles of an orange-red colour, inodorous, and having a strong styptic, disagreeable taste. It is deliquescent; soluble in water, alcohol, and ether.

Med. Use.—It acts analogously to bichloride of mercury; has been used with varying degrees of success in secondary syphilis, scrofula, chronic skin diseases, etc. Dose about $\frac{1}{20}$th of a grain—it is a powerful poison; the antidote the same as for bichloride of mercury.

Auri percyanidum. *Percyanide of gold. Tercyanide of gold.*

Codex, Ph. Franç. 1839.

℞ Gold, 1 part.
Aqua regia, 6 parts.
Cyanuret of potassium, pure, and in solution, 2 parts.
Distilled water, 24 parts, or q. s.

First dissolve the gold in the *aqua regia* evaporate the solution to dryness; take up the residue with 8 parts of distilled water; filter; heat the solution by a water-bath; and when it is reduced about a fourth, add gradually one-fourth of the solution of the cyanuret; continue the evaporation nearly to dryness; again add

distilled water 24 parts; let it rest for some time, and separate the cyanuret of gold produced by decanting off the liquor. The mother-liquor is again and again to be treated in a similar manner, adding a fresh portion of the cyanuret of potassium each time, as long as any cyanide of gold is deposited.

The percyanide of gold is a powder of a canary-yellow colour; without odour and without taste, and not soluble in water. By the action of heat it is changed into cyanogen and pure gold.

Note.—It is of great importance to the success of the operation that the cyanuret of potassium should be pure.

Med. Use.—In venereal and scrofulous affections, both externally and internally.

Dose.—From $\frac{1}{15}$th to $\frac{1}{10}$th of a grain, made into a pill.

Auri peroxidum. *Peroxide of gold. Teroxide of gold. Auric acid.* AuO^3.

1.

℞ Perchloride of gold, 10 parts.
Calcined magnesia, 40 parts.
Pure nitric acid, q. s.

Dissolve the perchloride of gold in about 400 parts of water; add magnesia, and boil the mixture for some minutes; wash the product with distilled water until the washings no longer throw down a precipitate with nitrate of silver. Wash it then with nitric acid diluted with about 20 parts of water, conducting the operation cold; then wash the residue, first with distilled water acidified with nitric acid, then with pure distilled water, until the washings no longer throw down a precipitate either by nitrate of silver or the subphosphate of soda. The insoluble product will be the hydrated peroxide of gold. It must be collected on a filter, and dried in the shade, in the open air.

Note.—It is indispensably necessary to the success of this operation to employ nitric acid perfectly free from hydrochloric acid.

2.

Dissolve one part of gold in *aqua regia*, evaporate the solution nearly to dryness, and add some distilled water; a little metallic gold and subchloride will remain undissolved; add more *aqua regia* to complete the solution, and evaporate and treat with water as before; to this solution add a solution of one part of chloride of barium in distilled water; afterwards add to the mixed liquors a slight excess of caustic potash, which will precipitate nearly the whole of the gold in the state of aurate of baryta, which falls as a heavy powder, and is easily washed. This powder, after being well edulcorated, is to be treated with diluted nitric acid, which will dissolve the baryta, and leave pure oxide of gold.

The gold is said to be more completely precipitated in this than in the preceding process.

Med. Uses.—Internally, in venereal and scrofulous diseases, in doses of from $\frac{1}{10}$th of a grain to a grain, made into pills with extract of mezereon.

Auri et sodii chloridum. *Chloride of gold and sodium.*

Codex, Ph. Franç. 1839.

℞ Perchloride of gold, 85 parts.
Chloride of sodium, 16 parts.

Dissolve the two chlorides in a small quantity of distilled water; concentrate the solution at a gentle heat to a pellicle; by cooling, the chloride of gold and of sodium will crystallize in prisms with four planes of an orange-yellow colour.

Auro-natrium chloratum. Chloratum auri cum chloreto natrii.

Ph. Borussica, 1847.

℞ Gold	ʒj.
Hydrochloric acid	ʒiij.
Nitric acid	ʒj.
Chloride of sodium	gr. 100.
Distilled water	ʒij.

Dissolve the gold in the mixed acids with heat. Evaporate the solution to the

consistence of syrup, and, when cold, add one ounce of distilled water to dissolve the crystalline mass; filter the solution, and add to it the chloride of sodium dissolved in the remainder of the water. Evaporate the liquor with a gentle heat until it has become dry, then powder it, and keep it in a well-stopped bottle.

Note.—It will be a yellow powder, deliquescent in the air, and perfectly soluble in water.

Maximum dose.—For an adult, one grain.

The chloride of gold and of sodium, though less deliquescent than the perchloride of gold, must be kept in a well-stoppered bottle.

Aurum musivum. *Mosaic gold. Bisulphuret of tin.* SnS^2.

Lond. Ph. 1746.

℞ Tin . . . . . ℔j.
Flowers of sulphur . . . ℥vij.
Sal ammoniac,
Purified quicksilver, āā . . ℔ss.

To the tin when melted add the quicksilver; when the mixture has cooled, let it be reduced to powder, well mixed with the sulphur and sal ammoniac, and let sublimation be made in a matrass: mosaic gold will be found beneath the sublimed mass with some dross at the bottom.

This is a bisulphuret of tin. When well made, it is in very soft golden flakes, very friable, and adhering to the fingers. It is insoluble in the acids, except in the nitro-hydrochloric acid. It is much used for ornamental work, under the name of *bronze powder*, especially by the manufacturers of paper-hangings.

Axungia oxygenata. *Oxygenated axunge.*

Ph. Bat. 1805.

℞ Depurated hog's lard, 16 parts.
Nitric acid, 1 part.

Let the acid be added to the axunge melted over a slow fire, and after constant stirring with a glass rod, let it be kept liquid by means of a gentle heat for so long a time that it no longer reddens blue litmus paper.

It should be extremely white, having been freed from all adhering acid; it is to be kept in a well-stopped vessel, and in a dark place.

Bael, *Bela*, or *Bel.*

The dried unripe fruit of *Ægle marmelos* (see page 230) has within these few years been imported into England under the name of *Bael*. It is recommended for the treatment of chronic dysentery and diarrhœa, in the form of decoction or extract.

Balneum acidum. *Acid bath.*

℞ Hydrochloric acid, of commerce . . . ℔ij ℥viij.
Water . . . . . 66 gallons.

This is the largest proportion of acid used. One-half, one-third, or one-fourth, the above quantity of acid is more frequently prescribed.

Balneum acidi carbonici. *Carbonic acid bath.*

Carbonic acid gas applied to the body or any part of it, by a suitable apparatus.

Balneum acidi nitro-muriatici. *Nitro-muriatic acid bath.*

Lendrick, of Dublin.

℞ Nitric acid, of commerce ℔j.
Hydrochloric acid, do. . ℔iss.
Warm water . . . . 40 galls.

Mix for a bath, in which the patient is to be immersed for 15 or 20 minutes.

Dr. Scott, of Bombay.

℞ Nitro-muriatic acid f ℥ivss. or f ℥vj.
Water . . . . 3 gallons.

Mix for a bath, in a wooden tub. The feet of the patient are to be immersed in this for 20 or 30 minutes; it may also be applied to other parts of the body with a sponge. In cold weather the water should be warm. It produces a tingling sensation on the surface of the skin, and a peculiar taste in the mouth. The application should be continued daily for two or three weeks. It has been strongly recommended for relieving the pains on the passing of gall-stones.

BALNEUM ALKALINUM. *Alkaline bath.*

℞ Carbonate of soda,
crystallized . . . ℔ss. or ℔j.
Water . . . . . 66 gallons.
Mix for a bath.

BALNEUM ANIMALE. *Animal bath.*

Applied by wrapping any part of an animal, just killed, round the body, or a limb. Formerly much esteemed.

BALNEUM ANTIMONIALE. *Antimonial bath.*

℞ Potassio-tartrate of antimony . . . . . ʒj. or ʒij.
Water . . . . . 66 galls.
Mix for a bath. Applied in lumbago, and some diseases of the skin.

BALNEUM ANTIPSORICUM. *Antipsoric bath*

Jadelot.

℞ Sulphuret of potassium,
dry . . . . . ʒiv.
Water . . . . . 60 galls.
Mix for a bath. Applied in cases of itch, and other cutaneous affections.

BALNEUM ANTISYPHILITICUM. *Antisyphilitic bath. Mercurial bath.*

℞ Bichloride of mercury . ʒij. to ʒj.
Water . . . . . 60 galls.
Mix for a bath. Applied in syphilitic cases, where mercury is rejected by the stomach.

BALNEUM ARENÆ. *A sand bath.*

Used as a means of applying heat through the medium of sand, in chemical operations.

BALNEUM AROMATICUM. *Aromatic herb bath.*

℞ Dried tops of hyssop.
,, wormwood,
,, rosemary,
,, sage, āā ʒivss.
Dried tops of Peppermint,
,, origanum,
,, thyme,
,, lavender, āā ʒivss.
Water Oxij. Boil, strain, and add sufficient water for a bath. Applied in cases of diarrhœa, chronic rheumatism, &c.

BALNEUM ASTRINGENS. *Astringent bath. Alum bath.*

Most.

℞ Alum . . . . ʒvjss.
Water . . . . 6 or 8 pailfuls.
Whey . . . . 1 pailful.
Mix for a bath.

BALNEUM CALIDUM. *The hot-bath.*

A bath of hot water, at a temperature from 98° to 112° Fahr.

BALNEUM CHLORINII. *Chlorine bath.*

Wallace.

Chlorine gas, applied to the body, or any part of it, by a suitable apparatus. It should be at a temperature from 104° to 150° Fah. The greatest possible care is necessary in applying the bath, to prevent any of the gas from being inhaled. It has been recommended in chronic affections of the liver.

BALNEUM CONII. *Hemlock bath.*

℞ Dried hemlock herb, 4 or 5 handfuls.
Water . . . . 1 gallon.
Infuse for eight hours and strain. The part affected is to be immersed in this infusion at a temperature between 90° and 95° Fah. It is recommended in some diseases of the skin.

BALNEUM FRIGIDUM. *The cold bath.* A bath of cold water.

BALNEUM FERRI IODIDI. *Iodide of iron bath.*

Pierquin.

℞ Iodide of iron ʒss. to ʒij.
Water . . . sufficient for a bath.
Applied in cases of amenorrhœa, &c.

BALNEUM FURFURIS. *Bran bath.*

℞ Bran . . . . . ℔iv.
Water . . . . . 2 gallons.

Boil, strain, and add sufficient water, at 90° Fah., to form a bath.

BALNEUM GELATINOSUM. *Gelatinous bath.*

℞ Gelatine . . . . . ℔ij.
Water . . . . . 1 gallon.

Dissolve and add to a warm bath.

BALNEUM GELATINO-SULPHUROSUM. *Gelatino-sulphurous bath.*

Dupuytren.

℞ Sulphuret of potassium . . . ℥iv.
Gelatine, or Flanders glue . . ℔ij.

Dissolve the salt and the glue separately, in hot water, mix the solutions, and add a sufficient quantity of warm water to form a bath.

BALNEUM IODURETUM. *Iodine bath.*

Lugol. For Adults.

	1.	2.	3.	
℞ Iodide of potassium	231	308	370	grs.
Iodine	123	154	184	„
Water	f℥xx.	f℥xx.	f℥xx.	

Dissolve, and add to a bath of 60 gallons.

For Children.

	1.	2.	3.	
℞ Iodide of potassium	77	92	107	grs.
Iodine	38	46	61	„
Water	f℥x.	f℥x.	f℥x.	

Dissolve, and add to a bath of 60 gallons.

Applied in scrofulous affections.

BALNEUM MARIÆ. BALNEUM MARIS. *A warm-water bath.*

The term *warm-water bath,* or water bath, is used in pharmacy, to designate an apparatus by which the heat of boiling water is applied, in conducting chemical operations. The term *warm-water bath,* or *warm bath,* is used in medicine to designate a bath of warm water, at a temperature from 92° to 98° Fah.

BALNEUM MARINÆ. *A sea-water bath.*

A *sea-water bath* is a bath of sea-water, for the artificial preparation of which see page 634.

BALNEUM SALINO-GELATINOSUM. *Bain de plombieres. Saline gelatinous bath.*

℞ Bay salt . . . . . ℥xvj.
Warm water . . . . . ℥lxiv.

Dissolve.

℞ Flanders glue . . . . ℥xxxij.
Warm water . . . . Ov.

Dissolve.

Mix the two solutions, and add them to 60 gallons of water, for a bath.

Applied in scrofulous complaints.

BALNEUM SAPONIS. *Soap bath.*

Of the hospitals of Paris.

℞ White soap. . . . . ℥xxxij.
Water . . . . . Ov.

Dissolve with the aid of heat, and add 60 gallons of water, to form a bath.

BALNEUM SULPHURETUM. *Sulphuretted bath.*

℞ Sulphuret of potassium . . ℥iv.
Water . . . . . Oj.

Dissolve and filter. Add water sufficient to make a bath of 60 gallons. f℥j of diluted sulphuric acid is sometimes added to decompose the sulphuret of potassium. This bath is applied in lepra, scabies, and other forms of skin diseases. For children half the above quantity of sulphuret of potassium is used.

BALNEUM SULPHUROSUM. *Sulphurous acid bath.*

Sulphurous acid gas, obtained by burning sulphur, and applied to the body, or any part of it, by a suitable apparatus, care being taken not to inhale any of the gas.

BALNEUM TEPIDUM. *The tepid bath.*

A warm-water bath, at a temperature from 85° to 92° Fah.

BALNEUM VAPORIS, *The vapour bath.*

The vapour of hot water applied to the body, or any part of it, by a suitable apparatus. The *tepid vapour-bath* has a temperature from 96° to 106° Fah.; the *warm vapour-bath*, from 106° to 120°; the *hot vapour-bath*, from 120° to 160°.

BALSAMUM ACETICUM CAMPHORATUM.

Pelletier.

℞ White curd soap,
Camphor, āā . . . 123 grains.
Acetic ether . . . ʒij.

Dissolve by the heat of a water-bath, and add

Oil of thyme . . . gtt. xx.

Mix.

Applied as a liniment in rheumatism, &c.

BALSAMUM ACOUSTICUM. *Balsamum peruvianum cum felle.*

Dr. Hugh Smith.

℞ Ox-gall . . . . . ʒiij.
Balsam of Peru . . . . ʒj.

Mix.

BALSAMUM ARCÆI. *Baume d'Arcæus. Arcæus' balsam.*

Soubeiran's Trait. Pharm. 1847.

℞ Mutton suet . . . . 4 parts.
Turpentine. . . . . 3 „
Elemi-resin . . . . 3 „
Axunge . . . . . 2 „

Melt with a gentle heat, strain through cloth, and stir together until cold.

BALSAMUM GILEADENSE. *Balm of Gilead. Baume de Mecca. Opobalsamum. Balm of the Old Testament.*

A fragrant oleo-resin, obtained from the Balsamodendron Gileadense. It was formerly held in high estimation as a medicinal agent, being considered antiseptic and vulnerary; its fumes were also said to be useful against barrenness. It has been used as a cosmetic for stimulating the skin and causing redness. It is rarely met with in this country.

BALSAMUM LOCATELLI. *Locatelli's Balsam.*

Lond. Ph. 1746.

℞ Olive oil . . . . . f ʒxvj.
Strasburgh (or Venice) turpentine,
Yellow wax, āā . . . . ℔ss.
Red sanders . . . . . ʒvj.

Melt the wax with part of the oil over a gentle fire; then add the rest of the oil and the turpentine; afterwards mix in the red sanders (in powder), and stir the whole together until the mixture grows cold.

Ph. Saxonica, 1837.

℞ Provence oil,
Red wine, āā . . . . . ʒiv.
Rose water,
Yellow wax, āā . . . . ʒiss.
Red sanders wood. . . . ʒj.

Boil together with a gentle heat until the moisture is almost evaporated, then add,

Common turpentine . . . ʒiij.
Camphor . . . . . ʒss.

Mix, and strain through linen.

SYNONYMES.

Balsamum Italicum. Balsamum Genofevæ.

This was considered pectoral, and is still occasionally used by the lower orders as a remedy for coughs, with an equal quantity of conserve of roses.

BALSAMUM NERVINUM. *Baume nerval. Nervine ointment.*

℞ Expressed oil of mace . . . ʒiv.
Beef marrow . . . . . ʒiv.

Melt and add,

Oil of rosemary . . . . ʒiv.
Oil of cloves . . . . . ʒj.
Camphor . . ʒj. } Dissolved in
Balsam of Tolu. ʒij. }
Rectified spirit. . . . . ʒiv.

Mix.

Applied as a liniment in rheumatism, &c.

BALSAMUM NUCISTÆ. *Balsam of nutmeg.*

Ph. Borussica, 1847.

℞ Yellow wax . . . . . ℥ss.
Olive oil . . . . . ℥j.
Expressed oil of nutmeg } . ℥iij.
(Expressed oil of mace) }

Liquefy and mix, pour the mixture into paper moulds, and when cold divide it into small pieces.

Note.—It will be orange colour, with an aromatic smell.

BALSAMUM PERUVIANUM. *Balsam of Peru.*

A black or reddish-brown liquid, about the consistence of treacle, with a smell somewhat resembling benzoin and petroleum. It is soluble in alcohol. Sp. gr. 1·15 to 1·16. It is imported from Valparaiso, Lima, and other South American ports.

BALSAMUM STOMACHICUM. *Stomachic Balsam.*

Ph. Slesvico-Holsat. 1831.

℞ Oil of cloves,
,, mace,
,, wormwood,
,, peppermint, āā . . . ʒss.
,, nutmeg . . . . . ℥j.
Balsam of Peru . . . . ʒj.
Mix.

BALSAMUM SULPHURIS. *Balsam of Sulphur.*

Lond. Ph. 1746.

Boil flowers of sulphur with four times their weight of olive oil, in a vessel lightly covered, until they assume the consistence of a thick balsam.

BALSAMUM SULPHURIS ANISATUM.

Edin. Ph. 1722.

℞ Flowers of sulphur . . . ℥ij.
Oil of turpentine . . . . f℥vj.
Oil of aniseed . . . . f℥iv.
Digest in a sand heat till the oils be saturated with the sulphur; then separate the balsam from the undissolved sulphur.

BALSAMUM SULPHURIS BARBADENSE. *Balsam of sulphur with Barbadoes tar.*

Lond. Ph. 1746.

Boil flowers of sulphur with four times their weight of Barbadoes tar, until they assume the consistence of a thick balsam.

BALSAMUM SULPHURIS TEREBINTHINATUM. *Balsam of sulphur with Oil of turpentine.*

Edin. Ph. 1722.

℞ Flowers of sulphur . . . ℥ij.
Oil of turpentine. . . . f℥vj.
Digest them together, in a sand heat, till the oil be saturated with the sulphur; then separate the balsam from the undissolved sulphur.

BALSAMUM TOLUTANUM. *Balsam of Tolu.*

A transparent, yellowish-brown substance, sometimes of the consistence of common turpentine, but more frequently much firmer, and even, occasionally, quite hard and brittle.

BALSAMUM UNIVERSALE. *Universal Balsam.*

Ph. Slesvico-Holsat. 1831.

℞ Rape oil, recently pressed . ℔iss.
Yellow wax . . . . . ℔ss.
Acetate of lead . . . . ℥iij.
Powdered camphor . . . ʒss.
Mix.

BALSAMUM VITÆ HOFFMANNI. *Hoffman's Balsam of Life.*

Ph. Danica, 1840.

℞ Oil of lavender,
,, cloves,
,, nutmegs,
,, cinnamon, āā . . ℈j.
Purified oil of amber . . gtt. x.
Balsam of Peru . . . . ʒss.

Rectified spirit coloured with alkanet root . . . . ℥x.

Mix, and filter.

Bandoline. *Fixature. Clysphitique.*

Used for stiffening ladies' hair, and keeping it in form.

No. 1.

℞ Gum Tragacanth . . . . ʒiss.
Water . . . . . ℥vij.
Proof spirit . . . . . ℥iij.
Otto of roses . . . . . gtt. x.

Macerate for 24 hours, and strain.

No. 2.

Thick mucilage of quince-seeds, scented with eau de Cologne, or any other spirit.

No. 3.

Thick mucilage of Carrageen moss, scented with eau de Cologne, or any other spirit.

No. 4.

℞ Castor oil . . . . . ʒij.
Spermaceti . . . . . ʒj.
Arnotto . . . . . ʒss.
Oil of bergamot . . . . ʒj.
Otto of roses . . . . gt. v.

Mix, with heat, and strain.

No. 5.

℞ Oil of almonds . . . . ℥j.
White wax . . . . . ʒj.
Tincture of mastic . . . ʒiij.
Oil of bergamot . . . . ʒj.

Melt the wax in the oil with heat, and add the tincture of mastic and scent.

Baryta. *Barytes. Symb.* BaO.

This earth was so called from its being the *heaviest* of the earths. (βαρυς, heavy.) Its sp. gr. is 4. It exists in several minerals, as in sulphate and carbonate of baryta. It can be obtained by calcining nitrate of baryta in a crucible.

Barytæ carbonas. *Carbonate of baryta. Witherite.*

Found native, and in that state is frequently used for the preparation of the other barytic salts.

It is obtained in a state of purity by adding a carbonated alkali to solution of chloride of barium or nitrate of baryta, and washing and drying the precipitate.

Note.—One hundred grains dissolved in an excess of nitric acid are not entirely precipitated with 124 grains of sulphate of magnesia.—*Edin. Pharm.*

Barytæ nitras. *Nitrate of baryta.* BaO, NO^5.

This may be obtained in the same manner as the muriate of baryta of the Edinburgh Pharmacopœia, only substituting pure nitric acid for the muriatic acid. The solution of this is employed as a test for detecting sulphuric acid.

Barytæ sulphas. *Sulphate of baryta.* BaO, SO^3.

The density of the native sulphate varies from 4 to 4·47. "White or flesh-red; heavy; lamellar; brittle."—*Edin. Ph.*

SYNONYMES.

Terra ponderosa. Spathum ponderosum.

Barii chloridum. *Chloride of barium.* BaCl + 2HO.

Edin. Ph. 1841.

Barytæ murias. Muriate of baryta.

℞ Carbonate of baryta, in fragments . . . . . ℥x.
Pure muriatic acid . . . Oss.
Distilled water . . . . Oij.

Mix the acid and water; add the carbonate by degrees; apply a gentle heat towards the close of the effervescence; and when the action is over, filter, concentrate, and set aside the solution to crystallize.

Or,

℞ Sulphate of baryta . . . ℔ij.
Charcoal, in fine powder . . ʒiv.
Pure muriatic acid . . . q. s.

Heat the sulphate to redness; reduce it to fine powder; mix the charcoal with it thoroughly; heat the mixture in a covered crucible for three hours at a low

white heat. Pulverize the product; put it gradually into five pints of boiling water; boil for a few minutes; let it rest for a little over a vapour bath; pour off the clear liquor, and filter it if necessary, keeping it hot. Pour three pints of boiling water over the residuum and proceed as before. Unite the two liquids, and, while they are still hot, or if cooled, after heating them again, add pure muriatic acid gradually, so long as effervescence is occasioned. In this process the solutions ought to be as little exposed to the air as possible; and in the last step the disengaged gas should be discharged by a proper tube into a chimney or the ash-pit of a furnace. Strain the liquor, concentrate it, and set it aside to crystallize.

Note.—One hundred grains in solution are not entirely precipitated by 100 grains of sulphate of magnesia.

Dubl. Ph. 1850.

Barii chloridum. (*Barytæ murias.*)

℞ Carbonate of barytes, coarsely powdered . . . . . ℥x.
Pure muriatic acid . . . f℥viij.
Distilled water, as much as is sufficient.

Dilute the acid with a pint and a half of the water, add the carbonate of barytes, and when effervescence has ceased, evaporate to dryness. Transfer the residue to a Hessian crucible, and, having exposed it to a low red heat for 20 minutes, suffer it to cool, then reduce it to a coarse powder, and boil it for 10 minutes with a pint and a half of water. Pour off the solution, boil the undissolved residue with 10 additional ounces of water, and again decant. Pass the decanted solutions through a paper filter, and having evaporated the resulting liquid to the bulk of about 14 ounces, suffer it to cool that crystals may be formed. The mother-liquor, by further evaporation and cooling, will yield additional crystals.

Or,

℞ Sulphate of barytes . . . ℔iss.
Lamb black . . . . . ℥iv.
Pure muriatic acid . . . ℥xiv.
Distilled water, a sufficient quantity.

Heat the sulphate of barytes in a covered crucible, and, while red hot, throw it into distilled water. Let it now, after being reduced to a very fine powder in the manner directed in the formula for *creta preparata*, be mixed intimately with the lamp black, and exposed in a Hessian crucible for 2 hours to a strong red heat. The crucible being removed from the fire, and permitted to cool, its contents are to be reduced to a coarse powder, and boiled for 15 minutes with 2 quarts of water, after which the solution is to be poured off on a paper filter. The undissolved residue is to be again boiled with 1 quart of water, and the resulting liquor decanted on the same filter. To the filtered solutions, placed in a large capsule beneath a flue with a good draught, let the muriatic acid be gradually added, as long as it produces effervescence, and then, by means of a sand heat, evaporate to dryness. Boil the residuum with 2 quarts of water, pass the solution through a paper filter, and, having evaporated it down to 1 quart, suffer it to cool, that crystals may be formed. By further concentration the mother-liquor will yield additional crystals.

Synonyme.—*Terra ponderosa salita.*

Use.—Rarely employed in medicine; chiefly as a re-agent for detecting sulphuric acid or sulphates.

Barilla.

The impure soda imported from Spain and the Levant. It is made by burning sea plants, chiefly of the genus *Salsola*, and collecting the ashes, which occur in porous masses, of a brown colour. *Kelp*, which is made in this country by burning different species of *Fucus*, is sometimes called *British barilla*.

Bassora gum. *Gomme Kutera*, of Th. Martius.

These names have been applied to a

species of Tragacanth met with amongst the gum senegal of commerce.

Bdellium.

A gum resin, some species of which somewhat resemble myrrh. *African bdellium*, according to Pelletier, consists of resin, 59·0; soluble gum, 9·2; bassorine, 30·6; volatile oil and loss, 1·2. *Indian bdellium* is sometimes sold in France under the name of Indian myrrh.

Bears'-grease.

The soft fat, obtained from the bear, has been thought to be a good application for preserving, and promoting the growth of, the human hair. Bears are sometimes fattened in this country and killed for the sake of their fat. Bears'-grease is also imported from Russia; but when thus obtained it is usually rancid. Most of what is sold in this country for *bears'-grease* is a mixture of lard and oil. The soft fat of calves is said to make a better imitation of *bears'-grease* than lard.

Bedeguar. *Sweet briar sponge. Gall of the eglantine.*

This is a hairy globular excrescence, found on the sweet briar or eglantine. Being a species of gall, it is supposed to contain tannic or gallic acid, but it has not been analysed. It was formerly administered medicinally, in doses of 10 to 40 grains, as a diuretic and lithontriptic; it has also been recommended as an anthelmintic.

Bebeerine. *Biberine.*

An alkaloid, obtained from the bark and fruit of the beberu tree, in the same way that quinine is from the cinchona bark. It has been recommended as a substitute for quinine.

Sulphate of Bebeerine is prepared in the same way as the corresponding salt of quinine. A neutral sulphate, and a subsulphate or disulphate, have been prepared, but principally the latter, for use in medicine. These salts are uncrystallizable, and are usually sold in brownish-yellow scales.

Beer.

The fermented infusion of malted barley flavoured with hops. The manufacture of beer involves several distinct processes:—1st, *the malting*, or conversion of the grain into malt; 2ndly, *the mashing*, or making the infusion of malt or sweet wort; 3rdly, *the hopping*, or boiling the sweet wort with hops; 4thly, *the fermenting*, or converting a portion of the saccharine matter into spirit; and 5thly, *the fining*, *ripening*, and *preservation* of the beer.

Malting is a process by which part of the starch of grain is converted into dextrine and sugar. The grain is steeped in water for two or three days, or until it has swelled, become somewhat soft and tender, and tinged the water of a reddish-brown colour. The water is then drained away, and the wet grain spread on a floor, in heaps of about two feet deep, called the *couch*, until it begins to sprout or germinate. It is then spread out in thinner heaps, and turned from day to day, to equalize the effect throughout the heap. When germination has extended far enough, the vitality of the seed is destroyed by the application of the heat of a kiln. This heat is applied gradually until the grain is rendered dry and crisp. This is malt; and its qualities differ according as the grain has been more or less soaked, germinated, dried, and baked. The colour of malt varies from very pale to nearly black. It is crushed in a mill before using it.

Mashing consists in extracting the soluble matter of the malt by means of hot water, and at the same time the remaining portion of the starch of the grain is converted into dextrine and sugar. The water used for this purpose should be between 145° and 160° F.; the best temperature is said to be 157° F. The malt is generally treated with several separate portions of water, and the product is called the *sweet wort*.

Hopping is the boiling of the wort with hops. The effect of this part of the

process is to impart the aromatic bitter flavour of the hop, and at the same time to remove some albuminous matter from the infusion, which, if allowed to remain, would cause the decomposition of the beer. The boiling is usually continued for an hour or two. No substitute for hops has been found to answer the purpose so well.

Fermenting consists in the conversion of the dextrine and sugar into spirit. The temperature best suited for conducting the fermentation is from 55° to 60° F. In winter, when the atmosphere is cold, the fermentation should be commenced when the liquor has been cooled to 64° or 60°; in summer it should be cooled to about 50°. It is important that the liquor should be cooled to this temperature, after being boiled, as speedily as possible, and therefore shallow vessels, called coolers, are generally used for this purpose. The fermentation is induced by the addition of yeast to the wort; this process is called *setting*.

Fining, *ripening*, and *preservation* of beer, involve particular management, which requires to be varied more or less in every separate case.

Ale. Barley wine. Ala. Cerevisia alba.

No. 1.

Pale malt, 14 quarters, mashed at three times, with 28, 18, and 18 barrels of water, boiled with 112 lbs of hops, set with 36 lbs of yeast, cleansed with 4 lbs of salt;—produces 34 barrels, or 9 pints from each gallon of malt.

No. 2.

Devonshire white ale.

Pale ale wort, 25 gallons; hops, 2 handfuls; yeast, 3 lbs; grouts, 6 or 8 lbs. When the fermentation is at its height, bottle in strong stone half-pint bottles, well corked and wired. Effervesces when opened.

No. 3.

Table ale.

Very pale malt, 12 quarters, mashed at three times with 46, 32, and 32 barrels of water, boiled with 62 lbs of hops, set with 114 lbs of yeast, cleansed by beating in the yeast head and taking it out again; —produces 100 barrels, or 4 gallons of ale from each gallon of malt.

Porter. Draught porter.

No. 1.

Pale malt, 7 quarters; amber malt, 6 quarters; brown malt, 3 quarters; mashed at twice with 56 and 48 barrels of water; boiled with 113 lbs of Kentish hops; set with 80 lbs of yeast, 4 lbs of salt, ½ lb. flour;—produces 56 barrels of porter, or 3½ gallons from each gallon of malt. A third mashing of the same grains produces 20 barrels of table beer.

No. 2.

Bottling porter.

Pale malt, 4 quarters, amber malt, 3 quarters, brown malt, 3 quarters, mashed at three times with 24, 13, and 12 barrels of water; boiled with 100 lbs of hops; set with 52 lbs of yeast, 2 lbs of salt;—produces 34 barrels, or 1½ gallon from each gallon of malt.

Table beer. Cerevisia.

Malt, 8 bushels; treacle, 10 lbs; mashed with 10 barrels of water; boiled with 8 lbs hops; add 8 lbs of burnt sugar and 8 oz. of Spanish liquorice, and set with 6 lbs of yeast.

Ginger beer.

No. 1.

℞ White sugar	lb iij.
Bruised ginger. . . .	ʒij.
Cream of tartar . . .	ʒj.
Lemons, sliced . . .	4
Water, boiling . . .	4 galls.
Yeast	ʒviij.

Pour the water on the four first-named ingredients, and infuse for two hours, then strain; add the yeast, and when fermentation has continued for a few hours put it into stone bottles and secure down the corks.

No. 2.

℞ White sugar	℔ jss.
Bruised ginger. . . .	ʒj.
Cream of tartar . . .	ʒiij.
Lemon juice	ʒj.
Water, boiling	1½ gall.
Yeast	ʒj.

Prepare as No. 1.

Ginger beer is sometimes made by preparing an infusion of ginger with lemon and sugar, as in the preceding formulæ, and, instead of fermenting it with yeast, charging it with carbonic acid gas by means of a soda-water machine.

Imperial pop.

℞ White sugar . . .	℔ iij. (Avoir.)
Bruised ginger . .	ʒij.
Cream of tartar . .	ʒvj.
Lemon juice . . .	ʒij.
Boiling water . .	Cong. iij.

Macerate until cold, then strain, and ferment the liquor with yeast like *Ginger beer*, No. 1.

Spruce beer. Cerevisia abietis.

White.

℞ Sugar	℔ vj.
Essence of spruce . . .	ʒiv.
Water, boiling	10 galls.
Yeast	ʒviij.

Add the water to the sugar and essence of spruce, ferment with the yeast, and bottle in the same way as ginger beer.

Brown.

Made in the same way as the white; but treacle is substituted for sugar.

Treacle beer.

℞ Treacle	℔xiv.
Hops	℔jss.
Water	36 galls.
Yeast	℔j.

Boil the hops with the water, add the treacle, and ferment as in making common beer.

Belemnites. ***Dactylus ideus. Thunder-stone. Thunder-bolt.***

A stone about the length and thickness of a man's finger, sometimes more, sometimes less; round, pointed, or in a pyramidal form like an arrow. They are of different colours—white, grey, or brown, and are brought from Candia and from Germany; they are also found abundantly about Paris, in the sandy grounds. There are two kinds; one, on being put into the fire, yields a bituminous smell, the other none at all. The first is plainly that which the ancients called *Lyncurius*, and falsely believed to be a kind of Succinum or Amber, formed by the coagulation of the urine of the *Lynx.—Pomet.*

These were formerly used internally in calculous disease, and externally to cleanse and dry wounds.

Bezoar. (From *Pa-zahar*, Persian, a destroyer of poison.)

Morbid concretions formed in the bodies of different animals. Several of these were formerly celebrated for their medicinal virtues, and distinguished by the names of the countries from whence they came, or the animals in which they were found. They were considered powerful Alexipharmics; so much so, indeed, that other medicines supposed to possess alexipharmic powers were called *Bezoardics.* Bezoars were once valued at ten times their weight in gold.

Bezoar bovinum.

Bezoar of the ox.

Bezoar germanicum.

From the Alpine goat.

Bezoar hystricus. ***Lapis Hystricus. Lapis porcinus. Lapis malacensis. Petro del porco.***

From the Indian porcupine, said to be found in the gall-bladder. From the province of Malacca. It has an intensely bitter taste, which it imparts to water.

Bezoar microcosmicum.

The calculus found in the human bladder.

Bezoar occidentale. ***Occidental bezoar. Western bezoar.***

Said to be obtained from a species of antelope. The surface is rough. Grey, brittle, spongy. Sp. gr. 1·666. From Peru, &c.

BEZOAR ORIENTALE. *Oriental bezoar.*

Said to be obtained from the stomach of a species of goat. It is of an oblong figure, with a smooth and shining surface, of an olive or dark-green colour. Sp. gr. 2·233. From Persia and the East.

BEZOAR SIMIÆ. *Monkey bezoar.*

From the stomach of a species of monkey, obtained by giving an emetic. Bright green, with a fine lustre. Formerly esteemed as a cordial.

BIRD-LIME.

A glutinous, very tenacious substance, of a greenish colour, sour flavour, and of the consistence of dough. The best bird-lime is made from the middle bark of the holly, which is boiled in water for seven or eight hours, or until it is quite soft, and then left to ferment for two or three weeks in pits in the ground. It is afterwards pounded in a mortar and washed with water.

An inferior kind is obtained from the misletoe, young shoots of the elder, and other vegetables.

BISMUTHUM. *Bismuth. Marcasita. Wismuth. Tectum argenti. Symb.* Bi. *Equiv.* 213.

Occurs only in the mineral kingdom; is found in Cornwall, Saxony, Bohemia, &c. Is met with in the metallic state nearly pure (*Native Bismuth*), and in combination with sulphur and with oxygen.

Note.—"The specific gravity is 9·8." Lond. Ph. 1851.

"Its powder is entirely soluble in nitric acid with the aid of heat; and the solution is colourless, or nearly so, and deposits a white powder when much diluted with cold water."—*Edin. Ph.* 1841.

BISMUTHUM REPURGATUM. *Purified bismuth.*

Codex, Ph. Franç. 1839.

℞ Bismuth of commerce . . .	200
Nitrate of potash	10

Reduce the bismuth and nitrate of potash to powder; mix well the two substances; introduce the mixture into a crucible; heat to a red heat and let it cool. The bismuth will occupy the lower part of the crucible. Pulverize it again, and treat it once more with the same proportion of nitre.

N.B.—Thus obtained, the metal is not yet chemically pure. It may, however, be employed in this state for pharmaceutical operations.

BISMUTHI SUBNITRAS. *Subnitrate of bismuth.*

Lond. Ph. 1851.

Bismuthi nitras. (*Bismuthi trisnitras*, Ph. 1836.)

℞ Bismuth	℥j.
Nitric acid	f ℥jss.
Distilled water	Oiij.

Mix a fluid ounce of the water with the acid, and the bismuth being added, apply heat until it is dissolved. Pour the solution into the remaining water, and strain the mixture through linen, so that the powder may be separated. Wash this with distilled water, and dry with a gentle heat.

It is dissolved in nitric acid without effervescence. Diluted sulphuric acid being added, nothing is thrown down.

Edin. Ph. 1841.

Bismuthum Album.

℞ Bismuth, in fine powder . .	℥j.
Nitric acid (D. 1·380) . .	f ℥jss.
Water.	Oiij.

Add the metal gradually to the acid, favouring the action with a gentle heat, and adding a very little distilled water so soon as crystals, or white powder, may begin to form. When the solution is complete pour the liquid into the water. Collect the precipitate immediately on a calico filter, wash it quickly with cold water, and dry it in a dark place.

Note.—It forms a colourless solution

with nitric acid, and without effervescence: not subject to adulteration.

Dubl. Ph. 1850.

Bismuthi subnitras.

℞ Bismuth, in small fragments . ℥ij.
Pure nitric acid . . . . f ℥iij.
Distilled water . . . . Cj.

Into the acid, first diluted with 3 ounces of the water, introduce the bismuth in successive portions, and having, when the spontaneous action has ceased, applied for 10 minutes a heat approaching that of ebullition, decant the solution from any particles of metal which may remain undissolved. Evaporate the solution at a gentle heat until it is reduced to 2 fluid ounces, and then pour it into half a gallon of the water. When the precipitate which forms has subsided, decant the supernatant liquid, and agitate the sediment with the remainder of the water. After 12 hours, again decant, and, having placed the precipitate on a filter, dry it at a temperature of 212°, and reduce it to powder.

Bismuthum hydrio-nitricum. Magisterium bismuthi.

Ph. Borussica, 1847.

℞ Metallic bismuth . . . ℥xvj.
Carbonate of soda . . . ℥ij.
Sulphur . . . . . ℥ij.

Fuse them in a crucible for an hour; then, when the crucible is cold, carefully separate the bismuth from the scoria.

℞ Bismuth purified as above, and broken into fragments . . ℥ij.
Nitric acid . . . . . ℥vj.

Treat the bismuth with the acid in a suitable vessel, adding as much more acid as may be necessary, with the aid of heat, to effect the entire solution of the metal. To the solution add half its volume of distilled water, filter it through powdered glass, and evaporate it until crystals are formed. Rub four ounces of these crystals to powder, and mix them with sixteen ounces of distilled water; then pour this mixture into a vessel containing seven pounds of hot water, and well stir them together. Immediately collect the precipitate by filtration, slightly wash it, and dry it without heat.

Med. Use. — Sometimes recommended in cases of dyspepsia characterized by painful contractions of the stomach. *Dose*, from gr. v. to gr. xv.

Bistre.

A brown colour which is used in water colours. It is prepared from the soot of beech wood. The soluble parts are washed away with water, and the insoluble residue mixed with gum-water, and formed into cakes.

Bittern.

The *Mother-water*, or uncrystallized residue left after the separation of the chloride of sodium from sea-water by crystallization. It contains sulphate and muriate of magnesia, also a small quantity of bromine and iodine, and has a bitter taste.

Bitumen.

Mineral pitch or tar, supposed to be formed in the earth from the decomposition of vegetable substances. It exists in several different conditions, either semifluid or hard. The semifluid sorts are distinguished as *Naphtha*, *Rock-oil*, *Petroleum*, or *Barbadoes tar*. These are met with in Persia, Rangoon, and other parts of Asia, in Switzerland, parts of France, the West Indies, North America, &c. The solid bitumen is distinguished as *Asphaltum*, *Jews' pitch*, &c. These substances are inflammable; they melt on the application of heat, and when mixed with dry chalk, brick-dust, or some other powder of this kind, form the dry *Bituminous mastic*, or *cement*, used for lining water-cisterns, covering roofs, terraces, foot-pavements, &c.

Black japan, *for leather.*

No. 1.

℞ Boiled linseed oil . . . 1 gall.
Burnt umber . . . . ℥viij.
Asphaltum . . . . . ℥iij.

Boil together, and add sufficient oil of turpentine to give it the proper consistence.

No. 2.

℞ Oil of turpentine . . . . ℥ij
Shellac . . . . . ℥j.
Spirit of wine. . . . . ℥iv.
Lamp-black . . . . . ℥ss.
Mix.

Black lead. *Plumbago. Graphite. Carburet of iron.*

A mineral of a lead or iron-grey colour, and very soft to the touch. It consists principally of carbon in a peculiar state of aggregation, and generally contains about 8 per cent. of iron. The finer kind is used for making pencils and crayons, and inferior kinds for giving a metallic lustre to the fronts of grates, &c.

Black reviver.

℞ Nut-galls . . . . . ℥iij.
Logwood, Sumach, Sulphate of iron, Iron-filings, āā . . ℥j.
Vinegar . . . . . Oij.
Boil together for a quarter of an hour, and strain.

Blacking for Boots, Shoes, &c.

No. 1.

℞ Bone black in fine powder . ℥xij.
Treacle . . . . . ℥vj.
Sperm oil . . . . . ℥iss.
Oil of vitriol . . . . ℥iij.
Strong vinegar . . . . Oiv.
Mix the bone-black and oil intimately together; mix the treacle with part of the vinegar, and add these to the preceding so as to form a thin paste; then gradually add the oil of vitriol, and when the effervescence has subsided, add the remainder of the vinegar.

No. 2.

℞ Bone-black . . . . . ℥xij.
Treacle . . . . . ℥iv.
Sperm oil. . . . . ℥j.
Oil of vitriol . . . . . ℥ij.
Vinegar . . . . . Oij.
Mix as No. 1.

No. 3.

German blacking.

℞ Bone-black . . . . . ℥xij.
Molasses . . . . . ℥vj.
Olive oil . . . . . ℥iss.
Hydrochloric acid . . . ℥iss.
Oil of vitriol . . . . . ℥iij.
Water . . . . . q. s.
Mix the bone-black, molasses, and oil together, with a little water; then add the acids, and sufficient water to form a paste.

No. 4.

℞ Ivory black . . . . . ℥ij.
Brown sugar,
Gum arabic, āā . . . . ℥j.
Small beer . . . . . Oj.
The white of an egg.
Mix. This does not require polishing with a brush.

Blacking paste,

Is made in the same way as liquid blacking (formula No. 1), excepting that the last portion of vinegar is not added.

Blacking balls.

No. 1.

℞ Lard,
Bees' wax, āā . . . . ℥j.
Ivory black,
Lamp black,
Brown sugar, āā. . . . ℥viij.
Common size . . . . ℥iv.
Mix, with heat to form a cake.

No. 2.

℞ Mutton suet . . . . . ℥iv.
Bees' wax,
Sweet oil,
Gum arabic, āā . . . . ℥j.
Lamp black . . . . . ℥iv.
Oil of turpentine . . . . ℥ss.
Melt the wax and suet with the oils, and stir in the lamp-black and gum in fine powder.

Blacking for harness.

℞ Bees' wax . . . . . ℥xij.
Oil of turpentine . . . ℥iss.
Prussian blue, ground in oil . ℥iss.
Ivory black . . . . . ℥iij.
Carriage varnish . . . . ℥ss.
Melt the wax and turpentine together, and mix in the other ingredients.

Blanquette.

A sort of barilla obtained from different

species of salicornia and salsola. Contains from 3 to 8 per cent. of carbonate of soda.

Blende. *Black jack.*

Native sulphuret of zinc.

Bolus armeniæ. *Armenian bole.*

Several argillaceous or calcareous minerals were formerly used in medicine under the name of *Bolus* or *Bole*, differing more or less from each other in colour and composition. *Red boles* were formerly obtained from Armenia, Lemnos, Strigonium, Portugal, Tuscany, and Livonia; *Yellow boles* from Armenia, Tockay, Silesia, Bohemia, &c.; and *White boles* from Armenia, Lemnos, Lamos, &c. Several of these earths were made into small cakes, and stamped with certain impressions, and were then called *Terræ sagillatæ*, or sealed earths. The only one of these now kept in the shops is the Armenian bole, which is usually made by mixing pipe-clay or common chalk with oxide of iron, or red ochre.

Boot-top Liquid, for cleaning boot-tops, &c.

No. 1.

For bleaching and removing stains.

℞ Oxalic acid . . . . . ℥j.
Water . . . . . Oj.

Dissolve the acid in the water, and apply the solution with a piece of rag.

For polishing and imparting colour.

℞ Gum arabic . . . . . ℥ss.
Red sandal wood . . . . ℥ss.
Boiling water . . . . . Oj.

Macerate for two hours and strain.

No. 2.

℞ Sour milk. . . . . Oiij.
Cream of Tartar . . . . ℥ij.
Oxalic acid,
Alum, āā . . . . . ℥j.

Mix.

Borax. $NaO, 2BO^3, 10HO$.

This is the biborate of soda. It occurs native in the East Indies and in South America, where it is called *Tincal*. It is however, now generally made in this country by saturating native boracic acid with soda.

Note.—Totally soluble in water. Sulphuric acid throws down scaly crystals from the solution. These dissolved in alcohol burn with a green-coloured flame. —Lond. Ph. 1836.

Note.—A hot concentrated solution, if treated with sulphuric acid, deposits copious scaly crystals on cooling. Not subject to adulteration.—Edin. Ph. 1841.

Bougie.

A cylindrical instrument to be introduced into the urethra, rectum, &c., for the purpose of dilating them. Bougies are usually made of slips of linen dipped into melted wax or plaster, and rolled up into compact cylinders on a heated tile. They are sometimes made of a mixture of glue and treacle, when they are very elastic and soft. Caoutchouc is also sometimes used in the preparation of them. Armed bougies are furnished with some active medicinal agent, such as caustic potash, nitrate of silver, or some preparation of mercury.

Brandy. *Spiritus vini Gallici.*

A spirit distilled from wine, and possessing a peculiar and agreeable flavour, due to the presence of a small portion of volatile oil.

British Brandy is made by flavouring corn spirit in imitation of the foreign brandy, but is very inferior to it. It may be made as follows:—

℞ Proof spirit . . .	100 pounds,
Crude Argol . . .	1 pound,
Acetic ether . . .	4 ounces,
French wine vinegar .	16 ounces,
Cognac brandy flavour	16 ounces,
French plums, bruised	4 pounds.

Distil with a gentle fire.

Brandy colouring.

White sugar melted over a slow fire, and

heated until it has assumed a dark colour, then dissolved in water.

Brandy bitters.

℞	Gentian root, sliced	℔iij.
	Orange peel, dry	℔ij.
	Cardamon seeds	℔j.
	Cinnamon, bruised	ʒviij.
	Cochineal	ʒij.
	Brandy	Ox.

Macerate for fourteen days and strain.

Brass.

An alloy of copper and zinc.

Bread (*Fermented*).

Dissolve 4℔s. of common salt, and half a gallon of yeast, in about 36℔s. of warm water; add sufficient flour to this to form it into a thin paste or dough; this mixture, which is called the *sponge*, is to be covered over, and put in a warm place to ferment; the fermentation usually commences in about an hour, the *sponge* swells up from the evolution of carbonic acid gas, and when no longer capable of confining the pent-up gas, it bursts and subsides; if the fermentation be allowed to proceed, the same effect will again and again take place; but after the first, or at the furthest, of the second or third subsidence of the *sponge*, the remainder of a sack (280℔s.) of flour, mixed with about 144℔s. of warm water, is to be added to the *sponge*, and well incorporated with it by kneading, which must be continued for some time; it is now allowed to ferment for a few hours, then again kneaded for a shorter time than before, and being made into loaves, is put into the oven and baked. The London bakers frequently substitute about half a pound of alum for an equal weight of the common salt, by which means the bread is rendered whiter, and the loaves part more easily.

Bread (*Unfermented*).

℞	Flour	℔v.
	Sesquicarbonate of soda	ʒss.
	Sesquicarbonate of ammonia	ʒss.
	Chloride of sodium	ʒiv.
	Hydrochloric acid	ʒv.
	Water	Oijss.

Mix intimately the salts with the flour, and the acid with the water, then mix the whole rapidly together with a wooden spatula so as to form a soft dough; put it into moulds, and introduce it into a quick oven immediately. It should be baked for about an hour and a half.

Baking powder.

No. 1.

℞	Tartaric acid, dry	ʒviij.
	Bicarbonate of soda, dry	ʒix.
	Arrow root, or rice flour	ʒx.

Mix.

No. 2.

Egg Powder, or Baking Powder.

℞	Bicarbonate of soda, dry	50℔.
	Tartaric acid, dry	30℔.
	Potato flour	1cwt.
	Turmeric powder	¾℔.

Mix.

Breeches balls, for cleaning leather breeches, &c.

℞	Powdered Bath brick	℔j.
	Pipeclay in powder	℔ij.
	Pumice-stone in powder	ʒiv.
	Ox-gall	ʒvj.
	Soft soap	ʒiv.

Water sufficient to form a paste, to be coloured with ochre, umber, or rose-pink.

Bromine. *Symb.* Br. *Equiv.* 78.

A metalloid, obtained from sea-water, from several salt springs, and the ashes of some sea weeds. It is a deep-red coloured liquid, with a strong smell somewhat resembling chlorine.

Bronze.

An alloy of copper and tin, to which sometimes a little zinc and lead are added. A good bronze for medals is formed of 90 parts of copper, 8 of tin, and 2 of zinc.

Bronze powder. *Aurum sophisticum.*

℞	Verdigris	ʒviij.
	Putty powder	ʒiv.
	Borax,	
	Nitre, āā	ʒij
	Corrosive sublimate	ʒij.

Make into a paste with oil, and melt them together.

Used as a gold colour.

Bronzing is the art of giving to objects of wood, plaster, &c., the appearance of their being made of bronze. The term is sometimes used to signify the production of a metallic appearance of any kind upon such objects. The objects are first covered with a coat of size or oil varnish, and when nearly dry, bronze powder, the powder of Dutch foil, gold leaf, mosaic gold, or precipitated copper, is applied with a dry brush, or dusting-bag. A white metallic appearance is given to plaster figures by rubbing them over with an amalgam of equal parts of mercury, tin, and bismuth, and then applying a coat of varnish. The iron-coloured bronzing is effected by applying finely-pulverized blacklead or plumbago. A bronze appearance is given to iron objects by plunging them into a solution of sulphate of copper, and allowing them to remain there until covered with a thin coating of copper. Copper coins, medals, &c., may be bronzed in the following manner:—Dissolve two parts of verdigris and one part of salammoniac in vinegar, boil the solution, strain it, and dilute with water until it has only a weak metallic taste, and on further dilution it lets fall no white precipitate. The solution is to be boiled, and then poured upon the objects to be bronzed, previously well cleaned and placed in a copper vessel; this vessel is to be put on the fire, and the solution kept boiling until the objects have acquired the proper colour. The Chinese are said to bronze their copper vessels by applying a mixture of two parts of verdigris, two of cinnabar, five of salammoniac, and five of alum, made into a paste with vinegar. This is repeatedly applied with heat, until the wished-for colour is produced.

Browning *of gun-barrels, &c.*, is effected by applying certain solutions which produce a thin film of oxide over the surface. This effect may be produced by enclosing the barrels in a space filled with the vapour of muriatic acid, or by moistening their surface with diluted muriatic or nitric acid. Chloride of antimony, or butter of antimony, is frequently used, and answers better than the foregoing; it is mixed with an equal quantity of olive-oil, and rubbed over the iron previously heated: it is then exposed to the air until the desired browning is effected, when it is carefully cleaned, and polished with wax, or covered with a varnish of shellac. The following solutions are used for the same purpose:—

No. 1.

℞ Nitric acid . . . . . ℥ss.
Sweet spirit of nitre . . . ℥ss.
Spirit of wine . . . . ℥j.
Sulphate of copper . . . ℥ij.
Tincture of chloride of iron ℥j.
Water . . . . . ℥xxx.
Mix.

No. 2.

℞ Sulphate of copper . . . ℥j.
Water . . . . . ℥iv.
Sulphuric ether . . . . ℥ij.
Mix.

Browning, for colouring and flavouring meat and made dishes.

Put ℥iv. of powdered white sugar, and ℥j. of fresh butter into a clean saucepan, and heat them over the fire until they begin to froth, and acquire a dark-brown colour; then gradually add Oj. of port wine, ℥ss. each of Jamaica and black pepper, six cloves, six shalots peeled, three blades of mace bruised, ℥iss. each of walnut and mushroom ketchup, some salt, and a little lemon-peel. Boil the whole gently for fifteen minutes, then strain and bottle it for use.

If it be intended for colouring alone, solution of caramel in water may be used.

Brucia.

An alkaloid, obtained from nux vomica and other vegetable substances of that class.

Med. Use.—The same as strychnia.

Dose.—gr. ss.

Brunswick black, for varnishing grates.

Melt 4lb of common asphaltum, and add 2lb of linseed oil, and one gallon of oil of turpentine.

Bug poison.

No. 1.

℞ Spirit of wine . . . . . Oj.
Camphor . . . . . ℥ij.
Oil of turpentine . . . . ℥iv.
Corrosive sublimate . . . ℥j.
Mix.

No. 2.

℞ Coal tar naphtha.
Oil of turpentine, āā . . ℥viij.
Mix.

No. 3.

℞ Olive oil . . . . . ℥viij.
Oil of turpentine,
Bees'-wax, āā . . . . ℥ij.
Salammoniac,
Arsenic,
Corrosive sublimate, āā . . ℥j.

Melt the wax and oils together, and then stir in the other ingredients, in powder, until the mixture is cold.

No. 4.

℞ Sulphuret of potassium . . ℥iv.
Soft soap . . . . . lbss.
Oil of turpentine . . . ℥iv.
Mix.

Cachou aromatise. *Cachou de Bologna. Aromatic pastilles of catechu, of the Italians.*

This preparation owes its origin to the Italians. The following is said to be the original formula:

No. 1.

℞ Spanish liquorice . . . ℥iijss.
Water . . . . . ℥iijss.

Dissolve by the heat of a water-bath, and add,

Bengal catechu, in powder . 462 grs.
Gum arabic, in powder . . 231 grs.

Evaporate to the consistence of an extract, and then incorporate the following substances in fine powder,

Mastic,
Cascarilla bark,
Charcoal,
Orris-root, āā . . . . 30 grs.

Reduce the mass to a proper consistence, remove it from the fire, and then add,

Oil of peppermint . . gtt. xxx.
Tincture of ambergris,
Tincture of musk, āā . . gtt. x.

Mix.

Form the mass into pills of one grain each, and cover them with gold or silver leaf.

They are usually made in this country from a more simple formula, such as the following:—

No. 2.

Melt the best Spanish liquorice in a water-bath with as much water as will form a hard pill-mass when cold, and flavour it with essential oils of peppermint, cloves, cinnamon, and pimento. Divide the mass into half-grain pills, flattened, and cover them with gold or silver leaf.

Med. Use.—For scenting the breath, and masking the nauseous odour occasioned by taking medicine, smoking, &c.

Calamina. *Lapis calaminaris. Calamine.*

The term *Calamine* is applied by mineralogists to two minerals, the *Silicate of zinc*, and the *Carbonate of zinc*, which very nearly resemble each other in appearance. Both these minerals usually contain iron, copper, and other impurities. The latter of these, the *Native impure carbonate of zinc*, is that alone which is indicated by the term *Calamine* in the pharmacopœias. That which is met with in commerce, and supplied for use in medicine, usually consists of sulphate of baryta, coloured with oxide of iron.

Calamina præparata. *Prepared calamine.*

Lond. Ph. 1851.

Native carbonate of zinc, burnt, rubbed into a very fine powder, and elutriated.

Nearly the whole is dissolved in diluted sulphuric acid, evolving none or very few bubbles of carbonic acid. This solution throws down, on the addition of ammonia or potash, that which is dissolved again on either being added in excess.

Edin. Ph. 1841. *Calamina præparata.*

"Levigated impure carbonate of zinc."

Med. Use.—It is only employed externally in the form of powder or ointment, for slight excoriations, chapped nipples, intertrigo, superficial ulcerations, and ophthalmia tarsi.

Calx. *Lime. Symb.* CaO. *Equiv.* 28.

Lond. Ph. 1836.

℞ Chalk . . . . . ℔j.

Break it into very small pieces, and burn it in a very strong fire for an hour.

Lond. Ph. 1851.

Lime recently prepared from chalk.

Water being added it falls slaked into powder. It is dissolved in diluted hydrochloric acid without effervescence. This solution throws down nothing on ammonia being added in excess.

Edin. Ph. 1841.

Heat white marble broken into small fragments in a covered crucible at a full red heat for three hours, or till the residuum when slaked and suspended in water no longer effervesces on the addition of muriatic acid.

Note.—It is slaked by water; muriatic acid then dissolves it entirely, without any effervescence; and the solution does not precipitate with ammonia in excess.

Remarks.—In calcining marble or chalk, to obtain lime, it is necessary, when a crucible is used, that it should have holes perforated in the bottom, so as to admit a current of air through it.

Calcis hydras. *Hydrate of lime. Slaked lime.* CaO, H O.

Prepared by throwing water on lime. Part of the water combines with the lime, and thereby causes a considerable evolution of heat, by which another portion of the water is vaporized; the lime swells up, cracks, and falls to powder, and in this state it it called *Calx extincta, Slaked lime*, or *Hydrate of lime*.

Note.—Hydrate of lime is dissolved in dilute hydrochloric acid without effervescence. This solution throws down no precipitate on the addition of ammonia. Lond. Ph. 1836.

Calcii chloridum. *Chloride of calcium.*

Lond. Ph. 1836.

℞ Chalk . . . . . ℥v.
Hydrochloric acid,
Distilled water, āā . . . Oss.

Mix the acid with the water, and to these gradually add the chalk, to saturation. Then, the effervescence being finished, strain; evaporate the liquor till the salt is dried. Put this into a crucible, and pour it, when melted at the fire, on a flat, clean stone. Lastly, when it has cooled, break it into small pieces, and preserve it in a well-closed vessel.

Note.—Void of colour; but little translucent; hard and friable; totally soluble in water; the solution gives no precipitate on the addition of ammonia or chloride of barium, nor, when diluted with much water, with ferro-cyanide of potassium.

Edin. Ph. 1841. *Calcis murias.*

℞ White marble, in fragments . ℥x.
Muriatic acid (commercial), and
Water, āā . . . . . Oj.

Mix the acid and water; add the marble by degrees, and when the effervescence is over, add a little marble in fine powder till the liquid no longer reddens litmus; filter and concentrate to one-half; put the remaining fluid in a cold place to crystallize; preserve the crystals in a well-closed bottle. More crystals will be obtained by concentrating the mother-liquor.

Note.—Extremely deliquescent: a so-

lution of 76 grains in one fluidounce of distilled water, precipitated by 49 grains of oxalate of ammonia, remains precipitable by more of the test.

Dubl. Ph. 1850.

℞ Chalk, in small fragments . ℔ij.
Pure muriatic acid . . . Oijss.
Distilled water . . . . Ovj.
Slaked lime, as much as is sufficient.

Into the acid, first diluted with the water, introduce the chalk in successive portions, and when the effervescence has ceased, boil for 10 minutes. Add now, stirring well, a very slight excess of slaked lime, and throw the whole upon a calico filter. Acidulate the filtered solution slightly by adding a few drops of muriatic acid, then evaporate it to dryness, and expose the residuum to a low red heat in a Hessian crucible. Finally, reduce the product rapidly to a coarse powder in warm mortar, and enclose it in a well-stopped bottle.

Med. Use.—It was at one time much employed in the treatment of bronchocele and in scrofulous diseases, being given internally; and at the same time used externally, dissolved in water, in the form of bath. It has now nearly fallen into disuse.

Dose.—See Calcii chloridi liquor.

Liquor Calcii chloridi. *Solution of chloride of calcium.*

Lond. Ph. 1836.

℞ Chloride of calcium . . . ℥iv.
Distilled water . . . . fℨxij.

Dissolve the chloride of calcium, and strain.

Edin. Ph. 1841. *Calcis muriatis solutio.*

℞ Muriate of lime . . . . ℥viij.
Water . . . . . fℨxij.

Dissolve the salt in the water.

Dubl. Ph. 1850.

Calcii chloridi liquor. *Calcis muriatis aqua.*

℞ Chloride of calcium . . . ℥iij.
Distilled water . . . . ℨxij.

Dissolve, and filter through paper.

The specific gravity of this solution is 1225.

Uses.—Has been deemed useful in bronchocele and scrofula.

Dose.—f ℥j. to f ℥ij.

Calcis carbonas. *Carbonate of lime.*

This occurs in both kingdoms of nature; several forms of carbonate of lime are employed in medicines: viz., marble, chalk, precipitated carbonate of lime, and carbonate of lime from animals. Most of them require some preparation before they are fit for use:—1st Marmor, *Marble Carbonas calcis durus.* This is used for the preparation of carbonic acid, as well as for other purposes; Carrara marble should be preferred, in consequence of its being free from iron. 2. Creta, *Chalk*—see Creta. 3. Calcis carbonas præcipitatum. *Precipitated carbonate of lime.* It is thus prepared:—

Dubl. Ph. 1850. *Calcis carbonas præcipitatum.*

℞ Chloride of calcium . . . ℥v.
Crystals of commercial carbonate of soda . . . . ℥xiij.
Boiling water. . . . . Oiv.

Dissolve each salt in a quart of the water; mix the two solutions, and when the precipitate has subsided, draw off the supernatant liquor. Transfer the sediment to a calico filter, and wash it with boiling hot distilled water, until the washings cease to give a precipitate with nitrate of silver. Finally, dry the product at a temperature not exceeding 212°.

4. Carbonate of lime from animals.—This is prepared from various animal substances: as oyster-shells, crabs' claws, crabs' stones, and red coral.

Med. Use.—Employed with much benefit as an antacid, especially when accompanied by diarrhœa; for this purpose it is advantageously combined with aromatics, or with opium. It is also employed as an antidote in poisoning with

nitric, muriatic, or oxalic acids. It is used extensively as an ingredient in tooth powder.

Dose.—Gr. x to ʒij in powder or in mixture.

Calcis chloridum. *Chloride of lime.*

According to the views entertained of its composition, this preparation has received different denominations; as, *Oxymuriate of lime; Chloruret* or *Chloride of lime; Chlorite of lime; Hypochlorite of lime; Calix chlorinata*, or *Chlorinated lime; Bleaching powder.*

Lond. Ph. 1836. Calx chlorinata. *Chlorinated lime.*

℞ Hydrate of lime . . . . ℔j.
Chlorine, a sufficient quantity.

Pass chlorine to the lime spread in a proper vessel, until it is saturated.

Chlorine is very readily obtained from hydrochloric acid by adding to it binoxide of manganese, with a gentle heat.

Note.—It is soluble in dilute hydrochloric acid, evolving chlorine.

The following are the characters of good chloride of lime, as given in the Edin. Ph. 1841:—"Pale greyish white: dry: 50 grains are nearly all soluble in two fluidounces of water, forming a solution of the density 1027, and of which 100 measures treated with an excess of oxalic acid give off much chlorine, and if then boiled and allowed to rest 24 hours, yield a precipitate which occupies 19 measures of the liquid."

M. Labarraque, to whom the Académie des Sciences awarded the Monthyon prize of 3000 francs, in 1825, for the success with which he demonstrated the efficaciousness of the chlorurets of soda and of lime, as disinfecting agents, proposes the following formula for its preparation:—

Chloruret of lime.—Slake quick-lime with a small quantity of water; mix the powder with a 20th of its weight of hydrochlorate of soda (common salt), and place the whole in long earthenware vessels, into which chlorine is passed. The hydrated lime, being sufficiently charged with chlorine, begins to get moist, by which it may be known that the operation is carried far enough. In order to try its point of saturation, take one part of the chloruret and dilute it with 130 parts of water; this solution should decolorize four and a half parts of sulphate of indigo.

Uses.—As a disinfecting agent; it is also antiseptic. A solution of chloride of lime has been used as a wash in some skin diseases—also in certain species of ophthalmia. *Internally*, it has been given with advantage in bad cases of typhus fever and in dysentery. *Dose*, from one grain to five or six, dissolved in one or two ounces of water, sweetened with syrup. Disinfecting and decolorizing tooth-powders, washes, and lozenges, often owe their efficacy to chloride of lime.

Liquor calcis chloridi. *Solution of chloride of lime.*

This is usually made by adding one part of chloride of lime in powder to 8 parts of water, stirring them together, allowing the mixture to stand for some hours, and then straining. It is sometimes obtained more highly charged with chlorine by mixing ʒiij. of chloride of lime, fʒxvj. of water, and fʒss. of diluted sulphuric acid; stirring the ingredients together, allowing them to stand for two hours, and straining. These solutions are used for disinfecting purposes, and as *Bleaching liquor.*

Dubl. Ph. 1850.

Calcis chlorinate liquor.

℞ Chlorinated lime . . . . ℔ss.
Water. . . . . Oss.

Blend well the water and chlorinated lime by trituration in a large mortar, and, having transferred the mixture to a stoppered bottle, let it be well shaken several times for the space of 3 hours. Pour out now the contents of the bottle on a calico filter, and let

the solution which passes through be preserved in a well-stoppered bottle.

The specific gravity of this liquid is 1035.

Dubl. Ph. 1850.

Calcis phosphas præcipitatum. *Precipitated phosphate of lime.*

℞ Ox bones, burned to whiteness in a clear fire . . . . . ℥iv.
Pure muriatic acid . . . fℨbj.
Distilled water . . . . . Oij.
Solution of ammonia . . . fℨxi.
or as much as may be sufficient.

Reduce the calcined bones to a fine powder, and digest upon this the acid, diluted with a pint of the water, until it is dissolved. To the solution, first cleared (if necessary) by filtration, add the remainder of the water, and then the solution of ammonia, until the mixture acquires an alkaline reaction; and having collected the precipitate upon a calico filter, let it be washed with boiling distilled water, as long as the liquid which passes through gives rise to a precipitate, when permitted to drop into a solution of nitrate of silver acidulated with nitric acid. The washed product should now be dried by exposing it for some days on porous bricks to a warm atmosphere.

Calcis biphosphas et sulphas. Calcis superphosphas. *Biphosphate and sulphate of lime. Superphosphate of lime.*

℞ Burnt bones . . . . . ℔ij.
Oil of vitriol . . . . . ℔j.
Water . . . . . ℔iij.

Macerate with a gentle heat for two or three days.

Use.—This, mixed with water or with earth, is used as a manure for land.

Calfini.

This term is applied by brewers to a solution of oil of birch-bark, which is employed to give a peculiar flavour to porter.

One ounce of birch-bark oil is put into a bottle with 4 quarts of rectified spirit; the mixture allowed to stand for some time in a slightly warm place, and then filtered. The birch-bark oil used for this and other purposes is imported from Russia. —*Ure.*

Camphor, artificial.

Obtained by passing hydrochloric acid gas through oil of turpentine. It is a white crystalline solid, very like camphor: hence its name. Its composition is $C^{20}H^{17}Cl$.

Candle, mercurial.

Candles made of wax and vermilion, have been recommended for effecting mercurial fumigations.

Caoutchoucine.

A very volatile liquid obtained by submitting caoutchouc to dry distillation, at a temperature of about 600° Fahr., in an iron still. Mixed with spirit, it forms a good solvent for some of the most difficultly soluble resins, and for caoutchouc.

Capers.

Employed as a sauce in cookery. They consist of the flower-buds of the caper-tree, *Capari spinosa*, preserved in vinegar. They are distinguished as *Nonpareille*, *Capucine*, *Capota*, *seconds* and *thirds*, according to their sizes and qualities. The smallest are considered the best.

Capsules. (From *Capsula*, a small box, case, or bag.)

Small egg-shaped vessels, in which nauseous medicines are administered. They are made either of a mixture of gelatine and sugar, or of animal membrane.

Gelatine capsules.

A small polished iron or ivory bulb, of the form and size of the capsule, attached to a handle by a slender rod from one extremity, is first rubbed with an oiled cloth, then dipped into a thick, hot solution of 6 parts of gelatine and one of sugar in water; it is then removed from the solution, the excess of which is allowed to run off, and when it ceases to drip, the handle is fixed in a board, with the coated bulb upwards,

until the gelatinous coating has become cold and firm. The capsule is now drawn off the bulb by a dextrous application of the fingers, and is dried on a tray by exposure to the air. When perfectly dry, the capsules are ranged on a board, each capsule being placed in a small cell with its mouth upwards, and the liquid they are intended to contain is introduced by means of a syringe having a very fine nozzle. The mouths of the capsules are then stopped with a drop of the solution of gelatine applied with a camel's-hair pencil, and this is afterwards covered with a thin coating of the same solution, by dipping the mouth of each capsule into some of the solution diluted with a little water.

Membrane capsules, or *Organic capsules.*

The manufacture of these is secured by a patent. The capsule is made of gut-skin, cleaned and purified, and while still moist, stretched over a bulb somewhat similar to that used in making the gelatine capsules.

Caramel. *Essentia bina.*

Put sugar into a dish or pan, melt it over a gentle fire, and continue the heat until the sugar has assumed a dark brown colour. In this state it will be soluble in water, forming a deep reddish-brown solution. It is used for colouring spirits, &c.

Carbo. *Charcoal.*

Lond. Ph. 1851.

Charcoal prepared from wood by fire.

Carbo animalis. *Animal charcoal.*

Lond. Ph. 1851.

A charcoal prepared from ox blood by fire.

Dubl. Ph. 1850.

Carbo animalis. Animal charcoal, ivory black.

Carbo animalis purificatus. *Purified animal charcoal.*

Edin. Ph. 1841.

℞ Ivory-black . . . . . ℔j.
Muriatic acid, commercial,
Water, āā . . . . . fʒxij.

Mix the acid and water; add gradually the ivory-black, stirring occasionally. Digest with a gentle heat for two days, agitating from time to time. Then boil; dilute with 2 pints of water; collect the undissolved charcoal on a filter of linen or calico, and wash it with water till what passes through scarcely precipitates with solution of carbonate of soda. Heat the charcoal, first moderately, and then to redness, in a closely-covered crucible.

Note.—When incinerated with its own volume of red oxide of mercury, it is dissipated, leaving only a scanty ash.

Dubl. Ph. 1850.

℞ Ivory-black . . . . ℔v.
Muriatic acid of commerce Oiij.
Water . . . . . Ciij. & Oiij.

Distilled water, as much as is necessary: to the acid, diluted with 3 pints of water, gradually add the ivory black, and digest, with repeated stirring, at a gentle heat for 24 hours. Pour on now a gallon of water, and when, after the mixture has been well agitated, the insoluble matters have subsided, remove the clear solution by decantation, or the syphon. Let this be done a second and a third time. Place now the black sediment on a calico filter, and wash it with distilled water, until the washings cease to give a precipitate with nitrate of silver. Finally, let the product be dried in a stove or oven, a gentle heat being at first applied, which must be finally raised to between 300° and 400°.

Uses.—Employed as a decolorizing agent, and for removing disagreeable smells from water and other liquids, which it effects in consequence of its power of absorbing substances, especially gases and colouring matter.

Carbon, bisulphuret of.

A very transparent, mobile, colourless liquid, having a peculiar offensive smell. Sp. gr. 1·27. It boils at 108°, is very combustible, and readily dissolves phos-

phorus, sulphur, camphor, resins, and volatile oils. It is obtained by passing the vapour of sulphur over red-hot charcoal, or by distilling a mixture of eleven parts of bisulphuret of iron and three parts of charcoal. It has been used in medicine as an external application.

Cassava. *Cassava bread.*

A farinaceous food made of the starch and some of the ligneous fibre of the *Janiphamanihot*, the tree yielding tapioca. It is made in flat cakes, which are baked on iron plates.

Cataplasma aluminis. *Cataplasm of alum.*

Dubl. Ph. 1826.

℞ Whites of two eggs,
Alum, āā . . . . . ʒj.

Shake them together, so as to form a coagulum.

Med. Uses.—A very useful application in ecchymosis of the eye, in ichorous ophthalmia, also in chilblains not yet broken. It should be applied between folds of linen.

Cataplasma carbonis. *Cataplasm of charcoal.*

Lond. Ph. 1851.

℞ Boiling water . . . . . fʒx.
Bread . . . . . ʒij.
Powdered linseed . . . . ʒx.
Charcoal . . . . . ʒiij.

Macerate the bread in the water, near the fire, for a little while; then mix, and gradually add the linseed; stirring, that a soft cataplasm may be made. Mix in 2 drachms of the charcoal with this, and sprinkle that which remains on the surface.

Cataplasma conii. *Cataplasm of Hemlock.*

Lond. Ph. 1851.

℞ Boiling water . . . . fʒx.
Powdered linseed (or as much as may be sufficient) . . ʒivss.
Extract of hemlock . . . ʒj.

Add the linseed gradually to the water, constantly stirring that a cataplasm may be made. Spread the extract, previously softened with water, upon this.

Med. Use.—An anodyne application to cancerous and scrofulous ulcers and other malignant sores.

Cataplasma fæculæ cerevisiæ. *Cataplasm of beer-grounds. Cataplasma bynes.*

℞ Grounds of stale beer,
Oatmeal, of each as much as may be required to make a poultice.

Med. Use.—It is applied cold twice or thrice a day, in the same cases as the following preparation,—which see.

Cataplasma fermenti. *Cataplasm of yeast.*

Lond. Ph. 1851.

℞ Yeast of beer;
Water, heated to the 100th°, of each . . . . . fʒv.
Flour . . . . . ℔j.

Mix the yeast with the water and add the flour, stirring, that a cataplasm may be made; place this on the fire hearth until it may swell up.

Use.—To correct the fetor of the discharge of gangrenous or foul ulcers.

Cataplasma lini. *Cataplasm of linseed.*

Lond. Ph. 1851.

℞ Boiling water . . . . . fʒx.
Powdered linseed . . . . ʒivss.

or as much as may be sufficient.

Add the linseed gradually to the water, constantly stirring, that a cataplasm may be made.

Med. Use.—An excellent emollient application; its salutary effects depend on its keeping the part to which it is applied moist and warm.

Cataplasma panis. *Bread cataplasm.*

Codex, Ph. Franç. 1839.

Pour boiling water on crumb of bread, and cover it until completely soaked: pour off the water, press the bread gently, an then beat it up with a spoon.

CATAPLASMA PAPAVERIS. *Poppy cataplasm.*

Codex, Ph. Franç. 1839.

Thicken decoction of poppies with crumb of bread.

CATAPLASMA ROSÆ. *Rose cataplasm.*

Codex, Ph. Franç. 1839.

℞ Powdered alum . . . . . ʒss.
Confection of roses . . . . ʒij.
Mix.

CATAPLASMA SINAPIS. *Mustard cataplasm.*

Lond. Ph. 1851.

℞ Boiling water . . . . . fʒx.
Powdered linseed,
Mustard, of each . . . . ʒiiss.
or as much as may be sufficient.

Add, the powders previously mixed together, gradually to the water, stirring, that a cataplasm may be made.

Med. Use.—Stimulant and rubefacient. It is applied spread on cloth to the soles of the feet, in the low stage of typhus, as also in coma and apoplexy; to the chest, in typhoid pneumonia.

CATAPLASMA SODÆ CHLORINATÆ. *Cataplasm of chlorinated soda.*

Lond. Ph. 1851.

℞ Boiling water . . . . . fʒvj.
Powdered linseed . . . . ʒivss.
Solution of chlorinated soda . fʒij.

Add the linseed gradually to the water, constantly stirring; then mix in the chlorinated soda.

CATAPLASMA SOLANI TUBEROSI. *Potato cataplasm.*

Scrape the inner part of raw potatoes into a fine pulp, and apply it cold as a poultice.

CAUDLE.

A nourishing, restorative gruel, given to the sick, and to women during their confinement.

Into a pint of fine gruel, not thick, put, while it is boiling hot, the yolk of an egg, beaten with sugar and mixed with a large spoonful of cold water, a glass of wine and nutmeg. Mix the whole well together.

Brandy is sometimes substituted for the wine, and lemon peel or capillaire added.

It is also sometimes made of gruel and beer, with sugar and nutmeg.

CAUSTICUM. *Caustic.*

An application for destroying the vitality of any part of the body.

Dr. Canquoin's caustics for cancers, lupus, &c.

No. 1.

℞ Chloride of zinc . . . . . ʒj.
Flour . . . . . ʒij.
To be made into a stiff paste with water.

No. 2.

℞ Chloride of zinc . . . . . ʒj.
Flour . . . . . ʒiij.
To be made into a stiff paste with water.

No. 3.

℞ Chloride of zinc . . . . . ʒj.
Flour . . . . . ʒiv.
To be made into a stiff paste with water.

No. 4.

℞ Chloride of zinc . . . . . ʒj.
Flour . . . . . ʒijss.
Chloride of antimony (butter of antimony) . . . . . ʒss.
To be made into a stiff paste with water.

Use.—A small piece, formed like a wafer, to be applied to the part affected for 24 hours.

Mr. Alex. Ure substitutes *Plaster of Paris* for flour.

Plunket's caustic for cancers, &c.

℞ Upright crow-foot,
Lesser spearwort, of each . . ʒj.
White arsenic . . . . . ʒj.
Sulphur . . . . . ℈v.
Beat into a uniform paste, and make into balls, which are to be dried in the sun.

Recamier's caustic.

℞ Chloride of gold . . . . grs. vj.
Aqua regia. . . . . ʒj.
Mix.
To be applied with a camel-hair brush.

Gondret's Ammoniacal caustic.

℞ Mutton suet,
Olive oil, āā . . . . . ʒj.
Melt with a gentle heat, and then add,
Solution of ammonia . . . ʒij.
Mix, by agitating the whole together until cold.

This is used for producing an immediate revulsion, or for promptly raising the epidermis.

Caviare. *Caviar. Caviale.*

The salted roe of certain species of fish, especially the sturgeon.

Cawk.

A name adopted by miners for sulphate of barytes.

Cement.

A substance capable of assuming a fluid or semifluid form, and of being in that state applied between the surfaces of bodies, so as to unite them by solidifying. Cements are made in a variety of ways, to suit particular purposes.

Armenian cement. Chinese cement. Diamond cement.

Soak isinglass in water until it is soft, then dissolve it in the smallest possible quantity of proof spirit, with the aid of a gentle heat. In ʒij. of this dissolve grs. x. of ammoniacum, and, while still liquid, add a solution of ʒss. of mastic in ʒiij. of rectified spirit; stir them well together, and put the mixture into small bottles, which are to be kept covered.

This cement, when used, is to be liquefied by putting the bottle into hot water. The quality of the cement improves with the application of heat, so that the last portions of a bottle will often be found to be better than the first. This cement resists the action of moisture. It is used by the Armenian jewellers for fixing ornamental stones to jewellery, &c.

Botany Bay cement.

℞ Botany bay resin,
Brick dust, āā . . . . . ℔j.
Mix together with heat.
Used to cement earthenware articles.

Cap cement.

This is one of the numerous cements which contain wax and resin, and are used for causing adhesion, or making tight joints, at common temperatures.

℞ Yellow resin . . . . . ʒv.
Bees'-wax . . . . . ʒj.
Red ochre . . . . . ʒj.

The latter should be well dried on a sand-bath, the wax and resin melted together, the powder stirred in by degrees, and the heat continued a little above 212°; and when the frothing has ceased, stirred till so cold that there is no fear of the earthy particles falling.

Chemical and electrical apparatus cement.

℞ Resin . . . . . ℔v.
Bees'-wax . . . . . ℔j.
Red ochre . . . . . ℔j.
Plaster of Paris . . . . ʒij.
Mix together with the aid of heat.

Engineer's cement.

No. 1.

Mix ground white lead with as much finely powdered red lead as will make it of the consistence of soft putty.

No. 2.

Mix equal parts of white lead and red lead, and add as much boiled linseed oil as is required to give it the proper consistence.

These cements are used for making metallic joints sound.

French cement.

Gum-water thickened with powdered starch. It is used by the French naturalists and artificial flower-makers. It keeps for a long time. A little lemon-juice is sometimes added.

Marine cement. Marine glue.

Digest from 2 to 4 parts of caoutchouc

cut into small pieces, in 34 parts of coal-tar naphtha, promoting solution by the application of heat and by agitation. To the solution, when formed, and which will have the consistence of thick cream, add 62 or 64 parts of powdered shellac, and heat the mixture over the fire, constantly stirring it, until complete fusion and combination has been effected. Pour the mixture while still hot on plates of metal, so that it may cool in thin sheets, like leather.

In using the cement, put some of it into an iron vessel, and heat it to about 248° Fahr., and apply it with a brush to the surfaces to be joined.

It is said to make a perfect union of pieces of wood, and is recommended for use in shipbuilding; hence its name.

Metallic cement.

℞ Oxide of zinc,
Sulphate of lead,
Black oxide of manganese,
Red oxide of iron, each . 100 parts,
Linseed oil . . . . 30 parts.

Triturate the oxide of zinc and sulphate of lead with the oil, then add the oxides of manganese and iron previously mixed together, and beat the whole in a mortar until it has acquired a suitable consistence.

Parolic cement. Universal cement.

Curdle skimmed milk; collect the curd; press out the whey; break the curd into small pieces; dry it by the heat of a water-bath, and reduce it to a fine powder. To ℥x. of this powder add ℥j. of finely-powdered quick-lime, and ℈ij. of camphor. Mix them well together, and keep the mixture in closely-stopped bottles. When used, a portion of the powder is to be mixed with a little water so as to form a paste, which is to be applied quickly.

Seal-engravers' cement. Plumbers' cement.

℞ Common resin,
Brick-dust, ää . . . . . ℔j.

Mix with the aid of heat.

This is inferior to the Botany Bay cement.

Tooth cements.

℞ Sandarac . . . . . ℥ij.
Mastic . . . . . ℥j.
Amber . . . . . gr. x.
Ether. . . . . ℥j.

Put the ingredients into a stoppered bottle, and dissolve with the aid of heat.

No. 2.

Put ℥ij. mastic, and ℥iij. of absolute alcohol, into a bottle capable of holding ℔ij. Effect solution by the aid of heat; and ℥ix. of dried balsam of Tolu, and again apply the heat of hot water, and frequently shake the ingredients together; then allow the bottle to stand in the hot water for some time, that any insoluble matter may subside. This is to be introduced into the tooth with a piece of cotton wool.

No. 3.

Vienna Tooth cement,

Consists of a viscid solution of some of the foregoing resins with powdered asbestos.

No. 4.

Ostermaier's Tooth cement.

The principle of this is the formation of phosphate of lime in the cavity of the hollow tooth.

For this purpose anhydrous phosphoric acid must first be formed by burning phosphorus under a bell-jar: 48 parts of the anhydrous acid are to be mixed with 58 parts of pure unslaked lime in fine powder, and the requisite quantity pressed into the tooth after it has been *well dried.*

Transparent cement.

Dissolve 75 parts of caoutchouc in 60 parts of chloroform, and add 15 parts of mastic.

Various cements.

No. 1.

Shellac dissolved in rectified spirit, forms a good cement in some cases. Or the shellac may be melted in the flame of

a candle and applied in this state. Shellac dissolved in water, with one-third of its weight of borax, is sometimes used.

No. 2.

White of egg, mixed with finely-powdered quick-lime, forms a good cement for joining spars and marble ornaments.

A similar composition is used by coppersmiths to secure the joints and rivets of boilers, but they substitute bullock's blood for white of egg.

No. 3.

℞	Clean river sand	℔xx.
	Litharge	℔ij.
	Quick-lime	℔j.
	Linseed oil	q. s.

To form a thin paste. This cement is applied to mend broken pieces of stone, as steps, &c., and after a time it acquires a stony hardness.

A similar composition has been used to coat brick walls, under the name of mastic.

No. 4.

℞ Iron-borings, 50℔s., pounded and sifted, mixed with chloride of ammonium or salammoniac, 1 ℔. When it is to be used, it should be mixed with as much water as will give it a pasty consistence.

This is an excellent cement for stoping cracks in iron boilers, tanks, &c.

No. 5.

℞	Borings of iron	℔iv.
	Potters' clay	℔ij.
	Powdered potsherds . . .	℔j.

Made into a paste with salt and water. Becomes very hard on drying.

No. 6.

℞	Chalk	℔j.
	Glue	℔ij.
	Paper, boiled in water and beaten to a pulp . . .	℔j.

Mix. Used for making architectural ornaments in relief.

No. 7.

℞	Whiting, sifted and heated to redness.	℔xvj.
	Black rosin	℔xvj.
	Bees'-wax	℔j.

The last two are to be melted together, and the whiting stirred in during the cooling.

No. 8.

℞ Boiled linseed oil and red lead mixed, so as to form a thin paste, are used by engineers.

Cement for mending steam-boilers, &c.

Mix 2 parts of finely-powdered litharge, with 1 part of very fine sand, and 1 part of quick-lime, which has been allowed to slack spontaneously by exposure to the air.

This mixture may be kept for any length of time without injury. In using it, a portion is mixed into a paste with linseed oil, or, still better, boiled linseed oil. In this state it must be quickly applied, as it soon becomes hard.

Hamelin's Mastic cement.

Mix 50 parts of siliceous sand, 50 parts of lime-marl or pulverized Portland or Bath stone, and 8 parts of litharge. When the cement is used, it is to be ground up with linseed oil.

Keene's Marble cement.

Gypsum is baked in the same way as for making plaster of Paris; it is then soaked in a saturated solution of alum, again baked to the same degree as before, and ground to a fine powder. It is now in a fit state for use. On being worked in the same way as plaster of Paris, it sets into a very hard composition, which is capable of taking a high polish. It may be coloured by mixing the powder with water containing any mineral colours, instead of common water.

Roman cement. Hydraulic mortar. Parker's cement.

This is a kind of cement or mortar which sets or becomes hard when covered with water. All good hydraulic mortars contain alumina and silica, in addition to lime. Some of the poorer sorts of limestone, containing from 8 to 25 per cent. of silica, alumina, magnesia, &c., when burnt, yield a lime which does not pre-

sent the usual phenomena of slaking, but which, when made into a paste with water, possesses the property of hardening under water. Cements possessing this property are also made by burning puzzolana, septaria, and siliceous or argillaceous earths, with or without common limestone, and then grinding them to powder.

CERATUM. *Cerate.*

Lond. Ph. 1851.

℞ Wax . . . . . ℥xx.
Olive oil . . . . . Oj.

Add the oil to the melted wax, and mix.

Med. Use.—This is the common cerate so much used in dressings.

CERATUM SIMPLEX. *Simple cerate.*

Edin. Ph. 1841.

℞ Olive oil . . . . . 6 parts.
White wax . . . . . 3 parts.
Spermaceti . . . . . 1 part.

Heat the oil gently, add the wax and spermaceti, stir the whole gently when it is fluid, and continue the agitation as it cools.

CERATUM CALAMINÆ. *Cerate of calamine.*

Lond. Ph. 1851.

℞ Prepared calamine,
Wax, of each . . . . . ℥viiss.
Olive oil. . . . . Oj.

Mix the oil with the melted wax; then remove from the fire, and, when it first thickens, add the calamine, and constantly stir, until they shall have cooled.

Edin. Ph. 1841.

℞ Calamine, prepared in the same manner as prepared chalk . . . . . 1 part.
Simple cerate . . . . . 5 parts.

Mix them well together.

Med. Use.—Very useful in cutaneous ulcerations and excoriations. It is desiccative and epulotic.

SYNONYMES.

Turner's cerate. Ceratum epuloticum.

CERATUM CANTHARIDIS. *Cerate of cantharides.*

Lond. Ph. 1851.

℞ Cantharides, rubbed to fine powder . . . . . ℥j.
Cerate of spermaceti . . . ℥vj.

Add the cantharides to the cerate softened by head, and mix.

Med. Use.—This is irritant, and used to keep up a discharge from a blistered surface.

CERATUM CETACEI. *Spermaceti cerate.*

Lond. Ph. 1851.

℞ Spermaceti . . . . . ℥ij.
White wax . . . . . ℥viij.
Olive oil . . . . . Oj.

To the spermaceti and wax, melted together, add the oil, and stir them with a spatula until they are cold.

Med. Use.—Emollient and cooling.

CERATUM AD FONTICULOS. *Issue plaster.*

Ph. Austr. 1836.

℞ Yellow wax . . . . . ℥vj.
Suet (mutton) . . . . ℥ij.
Lard.
Turpentine, āā . . . . ℥iss.
Red lead . . . . . ℥iv.

Melt the four first ingredients together, and then add the red lead. Linen is to be dipped into the melted mixture, then passed between rollers, and when cold polished with a glass spatula; and, finally, cut into squares.

CERATUM HYDRARGYRI COMPOSITUM. *Compound cerate of mercury.*

Lond. Ph. 1851.

℞ Ointment of mercury,
Compound cerate of soap, of each . . . . . ℥vj.
Camphor . . . . . ℥iss.

Rub together.

Med. Use.—Alterative and discutient.

Ceratum labiatæ. *Lip salve.*

℞ Spermaceti . . . . . ℥iss.
White wax . . . . . ℥ix.
Oil of almonds . . . . . ℥xij.
Alkanet root . . . . . ℥ij.
Otto of roses . . . . . ℥j.

Digest the first four ingredients in the heat of a water-bath for four hours, then strain through fine flannel, and add the otto of roses.

Ph. Hannov. nova, 1831.

℞ Oil of almonds . . . . . ℥iss.
White wax . . . . . ℥j.
Spermaceti . . . . . ℥j.

Mix and colour with alkanet root; add a little powdered alum, and scent it with oils of lemon and bergamot.

Ph. Austr. 1836.

℞ Fresh butter . . . . . ℔ij.
Yellow wax . . . . . ℥viij.
Oil of orange-peel . . . . ℥ss.

First melt the butter, and apply a gentle heat until all moisture has been dissipated, then add the wax, and strain the mixture, and when half cold add the oil of orange-peel. When quite cold make it into small squares.

Ceratum neutrale. *Kirkland's neutrale cerate.*

℞ Lead plaster . . . . . ℥viij.
Olive oil . . . . . f℥iv.
Prepared chalk . . . . . ℥iv.
Distilled vinegar . . . . f℥iv.
Goulard's extract of lead . . f℥ss.

Melt together the plaster and oil, add the chalk, and lastly the Goulard's extract, mixed with the distilled vinegar.

Ceratum plumbi acetatis. *Cerate of acetate of lead.*

Lond. Ph. 1851.

℞ Powdered acetate of lead . . ℥v.
White wax . . . . . ℥v.
Olive oil . . . . . Oj.

Dissolve the wax in 18 fluidounces of the oil; then gradually add the acetate, separately rubbed with the remaining oil, to these, and stir with a spatula, until they shall have united.

Synonyme.

Unguentum saturninum. Lond. Ph. 1746.

Unguentum cerussæ acetatæ. Lond. Ph. 1788.

Med. Use.—Cooling and astringent, and is used for inflamed sores, excoriations, and burns.

Ceratum plumbi compositum. *Compound lead cerate.*

Lond. Ph. 1851.

℞ Diacetate of lead . . . . f℥xj.
Wax . . . . . ℥viij.
Olive oil . . . . . Oj.
Camphor . . . . . ℥j.

Mix the melted wax wich 16 fluidounces of the oil; then remove from the fire, and, when they shall first thicken, gradually add the solution of lead, and assiduously stir with a spatula until they shall have cooled; lastly mix the camphor, dissolved in the rest of the oil, with these.

Synonyme.

Ceratum lithargyri acetati. Lond. Ph. 1788.

Med. Use.—The same as ceratum plumbi acetatis.

Ceratum resinæ. *Resin cerate. Yellow basilicon.*

Lond. Ph. 1851.

℞ Resin,
Wax, of each . . . . . ℥xv.
Olive-oil . . . . . Oj.

Melt the resin and the wax together with a slow fire; then add the oil, and press out the cerate as yet hot, through linen.

Med. Use.—A useful application to foul indolent ulcers, from its digestive and cleansing properties.

Ceratum sabinæ. *Savine cerate.*

Lond. Ph. 1836.

℞ Savine, bruised . . . . . ℔j.
Wax . . . . . ℔ss.
Lard . . . . . ℔ij.

Mix the savine with the lard and wax melted together, then strain through a linen cloth.

Edin. Ph. 1841.

℞ Fresh savine . . . . . 2 parts.
Bees' wax . . . . . 1 part.
Axunge . . . . . 4 parts.

Melt the wax and axunge together, add the savine, and boil them together till the leaves are friable, then strain.

Med. Use.—This is irritative, and used to keep up a discharge from a blistered surface; it is preferable to the ceratum cantharidis, as it causes less pain.

Ceratum saponis compositum. *Compound cerate of soap.*

Ceratum Saponis, Ph. 1836. Lond. Ph. 1851.

℞ Soap . . . . . ℥x.
Wax . . . . . ℥xiiss.
Powdered oxide of lead . ℥xv.
Olive-oil . . . . . Oj.
Vinegar . . . . . Cj.

Boil the vinegar with the oxide with a slow fire, constantly stirring, until they may unite together; then add the soap, and boil again in like manner, until all the moisture has been consumed; lastly mix the wax, previously melted in the oil, with these.

Med. Use.—It is desiccative and resolvent, and is applied, spread on linen, around fractured limbs, but not before all inflammation has abated. As a covering to strumous swellings it is considered useful.

Ceratum pro tectu. *Cerate pour le toucher. Cerate for touching.*

Soubeiran's Trait. Pharm. 1847.

℞ Spermaceti . . . . . 1 part.
Yellow wax . . . . . 1 „
Olive oil . . . . . 16 „
Caustic soda . . . . . 1 „

Dissolve the spermaceti and wax in the oil with a gentle heat; then add the caustic soda, and stir the whole till it cools.

This cerate is used in lying-in houses, for practising the touching.

Cerevisia antiscorbutica. *Antiscorbutic beer.*

Ph. Castr. Ruthena, 1840.

℞ Fresh scraped horseradish . ℔iv.
Acorus calamas root . . ℔j.
Ginger . . . . . ℥j.
Juniper berries . . . . ℔iij.
Buds of Pinus abies . . ℔j.
Syrup of brown sugar . . ℔vj.
Beer . . . . . ℔120.

Macerate for four days, until it ferments, then strain and add

Cream of tartar . . . . ℔ss.
Tincture of mustard (mustard ℥j; spirit ℔) . . . . ℔v.

Mix.

Cerium. Symb. Ce. equiv. 47.

Some of the salts of cerium have been introduced as remedial agents by Dr. Simpson of Edinburgh. The nitrate and oxalate are the preparations which have principally been used. In doses of one grain, repeated two or three times a day, these salts are recommended in cases in which bismuth and the salts of silver are used, as sedative tonics.

Cerium is obtained from some rare minerals such as *cerite*, *allanite*, &c., from which the above preparations are made.

Charta ad fonticulos. *Issue plaster.*

Ph. Suecica, 1845.

℞ Turpentine . . . . . ℥ij.
Mutton suet . . . . . ℥iv.
Yellow wax . . . . . ℔ss.
Yellow resin . . . . . ℔j.
Crystallized verdigris . . ℥ss.

Melt the first four ingredients together by the heat of a water-bath, and while still hot, mix in the verdigris in fine powder. To be spread on slips of paper.

Charta resinosa. *Charta antirheumatica, seu antarthritica.*

Ph. Borussica, 1847.

Spread a thin layer of common pitch over the surface of paper.

Synonymes.—*Emplastrum pauperis. Poor man's plaster.*

Chinese galls.

The bodies thus called are imported from China. They are generally of a tuberculated, branched, but sometimes more or less rounded, form; varying from one to two inches in length, of a yellowish grey colour externally, hollow, and breaking with a resinous appearance. They abound in tannic acid, and are said to be free from extractive.

Chlorine. Symb. Cl. equiv. 35·5.

A heavy gas having a yellowish green colour. Sp. gr. 2·5. It has a pungent, suffocating smell, and if respired, unless very much diluted, it causes instant death.

Chlorinii aqua. *Chlorine water.*

Lond. Ph. 1851.

Liquor Chlorinii recens præparatus. *Solution of Chlorine recently prepared.*

℞ Hydrochloric acid. . . .	f℥j.
Powdered binoxide of manganese	℥ij.
Distilled water	Oss.

Mix the acid and binoxide in the retort, then pass over the chlorine into the water until it shall have wholly ceased to be produced.

Edin. Ph. 1841.

℞ Muriate of soda . .	℥j.
Sulphuric acid (commercial)	f℥ij.
Red oxide of lead . .	350 grs.
Water	f℥viij.

Triturate the muriate of soda and oxide together; put them into the water contained in a bottle with a glass stopper; add the acid; agitate occasionally till the red oxide becomes almost all white. Allow the insoluble matter to subside before using the liquid.

Dubl. Ph. 1850.

Chlorinii Liquor. Aqua Chlorinii.

℞ Peroxide of manganese, in fine powder	℥ss.
Muriatic acid of commerce	f℥iij.
Distilled water	℥xxiv.

Introduce the peroxide of manganese into a gas bottle, and, having poured upon it the muriatic acid diluted with 2 ounces of water, apply a gentle heat, and, by suitable tubes, cause the gas, as it is developed, to bubble through 2 additional ounces of the water placed in an intermediate small phial, and then to pass to the bottom of a Oiij bottle, containing the remainder of the water, and whose mouth is loosely plugged with tow. When the air has been entirely displaced by the chlorine, let the bottle be disconnected from the apparatus in which the gas is generated, corked loosely, and shaken until the chlorine has been absorbed. It should now be transferred to a pint bottle with a well-ground glass stopper, and preserved in a cool and dark place.

Med. Use.—Internally—it operates as a stimulant, and is employed with benefit in the advanced stages of typhoid fevers and epidemic dysentery, in malignant sore throat, and in chronic disease of the liver.

Externally—chlorine water has been used largely diluted, as a wash to foul and indolent ulcers and for chronic cutaneous diseases, in the form of gargle in cynanche maligna, and as a local bath in hepatitis.

Dose.—f℥ss to f℥ij in as many ounces of water sweetened with syrup. For external use f℥j may be diluted with f℥j of water.

Chloroformyl. *Chloroform.*

Lond. Ph. 1851.

℞ Chlorinated lime	lbiv.
Rectified spirit	Oss.
Water	Ox.
Chloride of calcium, broken into pieces	℥j.

Put the lime, previously mixed with the water, into the retort, and to these add the spirit, so that the mixture may fill as much as the third part of the retort. Then heat in a sand bath, and when the ebullition first commences, take away the fire as quickly as possible, lest the retort be broken by the

suddenly increased heat. Let the liquor distil into a receiver, until nothing falls in it, the fire being restored, if it shall be at any time necessary. Add 4 times the quantity of water to the distilled liquor, and shake all well together. Cautiously separate the heavier part which shall have subsided, and add the chloride to it, and shake frequently for an hour. Lastly, let the liquor distil again from a glass retort into a glass receiver.

Destitute of colour, with a pleasant odour, the specific gravity is not less than 1·48. It is scarcely entirely dissolved by water. It does not affect the colour of litmus with red. Rubbed on the skin it quickly flies off, scarcely any odour being left.

Dubl. Ph. 1850.

Chloroformum.

℞ Chlorinated lime	℔x.
Fresh-burned lime . . .	℔v.
Water.	Civ.
Rectified spirit	℥xxv.
Peroxide of manganese, in fine powder	℥ij.

Shake the lime with a quart of the water, first raised to the boiling temperature, and having placed the slaked lime and the chlorinated lime in a sheet iron or copper still, pour on the residue of the water first mixed with the spirit, and raised to the temperature of 100°. Connect now the still with a condenser, and apply heat, which, however, must be withdrawn the moment the distillation commences. The distilled product, the bulk of which need not exceed a quart, will occur in 2 distinct strata, the lower of which is the crude chloroform. Let this be agitated twice in succession, with an equal volume of distilled water, and then in a separate bottle with half its volume of pure sulphuric acid. Lastly, let it be shaken in a matrass with the peroxide of manganese, and rectified from off this at a very gentle heat.

The specific gravity of chloroform is 1496.

The lighter liquid which distils over with the chloroform, and the water used in washing the latter, should be preserved with the view of their being introduced, with a new charge, into the still in a subsequent process.

Chocolate.

A paste made of the roasted cacao-nut, triturated with sugar and aromatics, such as vanilla.

Cider.

The fermented juice of the apple.

Cigarettes. *Medicinal cigars.*

The administration of medicinal agents in the form of cigars, is of recent introduction. Stramonium leaves made into small rolls, *Stramonium cigars*, have been used with advantage in cases of asthma, &c. other plants and substances are administered in a similar way abroad.

Cigarettes opiaces. *Opium cigars.*

Belladonna leaves are moistened with a solution of extract of opium and made into small cigars.

Cigarettes aromatiques. *Aromatic cigars.*

Aromatic spices and lavender flowers made into small cigars.

Cigarettes de camphre de Raspail. *Cigarettes of Camphor. Camphor cigars.*

These are made by nearly filling the tube of a quill with small pieces of camphor; piercing the closed end with a pin in two or three places, and loosely stopping the open end with a bit of rolled paper or cotton wool. The eccentric Raspail has recommended these cigarettes as a sort of panacea, or at least as a means of preventing disease. The open end of the quill is put into the mouth and the vapour of the camphor inhaled, the vaporization being sometimes promoted in cold weather by holding the quill for a few minutes in the warm hand.

Clairet. *Rosalis des six grains*

℞ The seeds of anise, fennel, dill, coriander, caraway, and *Daucus creticus*, āā . ʒj.
Proof spirit . . . . . Oiv.
Sugar . . . . . ℔j.
Macerate for a week, and strain.

Clothes ball, for cleaning clothes.

℞ Pipeclay . . . . . ℔ij.
Fuller's earth,
Prepared chalk,
Ox-gall, āā . . . . . ʒiv.
Mix.

Coffee.

The roasted berry of the *Coffæa Arabica*, extensively used in decoction or infusion, as an article of diet. The following have been used as substitutes for it:—

Rye coffee. Dillenius's coffee. Hunt's economical breakfast powder.

Rye roasted with a little butter, and used as coffee.

Succory coffee. German coffee.

Succory root roasted with a little butter or oil. It is extensively used for adulterating coffee.

Sylvester's coffee. Iris coffee.

The seeds of the yellow water-flag, *Gladiolus luteus*, or *Iris pseudacorus*. This is said to be the best of the European substitutes.

Besides the above, fœnugreek-seeds, chick-peas, holly-berries, broom-seeds, gooseberry-seeds, currant-seeds, rice, beet-root, and horse-beans, have severally been used for making a substitute for coffee.

Cold cream. *Ceratum galeni. Pommade en crème. Cremor frigida.*

℞ Sweet oil of almonds . . . ʒx.
White wax,
Spermaceti, āā . . . . ʒiss.
Rose water . . . . . ʒx.
Oil of bergamot . . . . ℥ss.
Oil of lavender . . . . ʒj.
Otto of roses . . . . . ʒj.

Melt the wax and spermaceti in the oil of almonds by the heat of a water-bath, then put these into a *marble mortar* previously heated to the temperature of boiling water, and add the rose water gradually, while the mixture is constantly stirred or whisked with an egg-whisk, until the whole has become cold.

It is desirable to use a marble mortar, as it retains the heat longer than a wedgewood mortar. A smaller proportion of wax and spermaceti may be used in cold weather.

Collodium. *Collodion.*

Ph. Norvegica, 1854.

℞ Nitrate of potash, in powder 20 parts
Sulphuric acid, sp. gr. 1·84 32 „
Best carded cotton . . 1 part.

Mix the nitrate of potash and sulphuric acid in a glass vessel, and when the salt has dissolved add the cotton, stirring it with a glass rod; then cover the vessel, with a plate of glass, and allow the mixture to stand for 24 hours at a temperature of 86° Fahr. Afterwards remove the cotton from the mixture, well wash it in tepid water until it is perfectly free from acid, and dry it by a gentle heat.

℞ The cotton thus prepared. 1 part.
Ether . . . . . 16 parts.
Rectified spirit . . . 4 „

Mix in a stoppered bottle and shake them together until the cotton is dissolved.

Mr. Hadow's process.

Mr. Hadow recommends the use of a mixture of nitric and sulphuric acids, and he has found that, to produce a cotton soluble in a mixture of ether and alcohol, the acids used for preparing the cotton must not be in the most highly concentrated state, the presence of a little water beyond that forming the monohydrates (the lowest hydrates) of the acids, being necessary. The mixture which he found most suitable is represented by the formula

(NO^5, HO+2 (SO^3, HO)+3½ HO). This mixture is obtained by mixing 89 parts by weight of nitric acid of sp. gr. 1·424, with 104 parts by weight of sulphuric acid of sp. gr. 1·833. He uses the acid mixture at a temperature of about 130° Fahr., and immerses the cotton in it for about 10 minutes.

Mr. Hadow has also recommended the following method of conducting the process:—

Mix 5 parts, by measure, of strong oil of vitriol, and 4 parts, by measure, of nitric acid of not less specific gravity than 1·4. Put this mixture into a porcelain or glass vessel capable of bearing heat, and add to the mixed acids small quantities at a time of water (about half a drachm being added each time, and two ounces of the mixture), testing the mixture after such addition of water by putting into it a small bit of cotton, and when this is found to contract and dissolve on being immersed, the further addition of water is stopped, and half the quantity of oil of vitriol originally used is now added to the mixture. The acid thus made is of the proper strength. If its temperature be not above 130° nor below 100° Fahr., the cotton may be at once put into it, using as much cotton as can be completely and easily immersed. The cotton is left in the acid for about 10 minutes; it is then removed and well washed with cold water until every trace of acid has been removed. A little ammonia may be added to the water used for washing the cotton, to ensure the perfect absence of free acid.

The cotton thus prepared, after being dried, is dissolved in a mixture of 5 parts of ether, and 3 parts of rectified spirits.

Many operators recommend that, in making the soluble cotton, not more than 40 grains of cotton should be operated upon at once, as it is difficult to get larger quantities completely and uniformly acted upon by the acid.

Collyrium.

Liquid applications for the eyes, or eye-waters, are frequently designated by this name.

Colocynthis præparata. *Prepared colocynth. Trochisci Alhandel.*

Codex, Medic. Hamberg. 1845.

℞ Colocynth, freed from seeds, and cut	℥v.
Gum arabic	℥j.
Water	q. s.

Make it into a paste, dry, and powder it and keep in bottles.

Note.—To be dispensed only by a physician's order.

Dose.—Two grains.

Colophonium. *Colophony. Black rosin.*

The residue left after the distillation of oil of turpentine from common turpentine. It differs from *Yellow rosin* in being anhydrous, while yellow rosin is a hydrate.

Colours and Pigments.

Black and Brown Colours. *Ivory Black. Cologne Black. Cassel Black.*

Made by calcining fragments or turnings of ivory in a close crucible or retort, until the whole of the organic matter is carbonized. Common bones are sometimes used, but they do not produce so fine a black as ivory.

Lamp Black.

This is the carbonaceous matter deposited from the imperfect combustion of oils, resins, or other similar substances.

Umber. Terra umbria. Creta umbria.

A massive mineral, of a fine pale brown colour, and compact texture; it is soft and dry to the touch, and adheres strongly to the tongue; it assumes a deep brown colour when exposed to heat. According to Klaproth, it consists of 13 parts of silica, 5 of alumina, 48 of oxide of iron,

20 of manganese, and 14 of water, in 100 parts. It is principally brought from the island of Cyprus, and from Turkey. *Cologne earth* is a kind of Umber, of a dark-brown colour.

Burnt umber.

The mineral umber exposed to a dull red heat for half an hour, by which the colour is improved. This, as well as the former, is used as a brown colour by painters.

Sienna. Terra sienna.

An argillaceous mineral, of a fine texture, very light, smooth, and glossy, of a yellowish-brown, or coffee colour: when wetted and drawn over paper, it leaves a dull orange trace. By calcination it assumes a reddish-brown colour and is then called *Burnt sienna.* The best sort is brought from Italy, but it is found, of inferior quality, in England, in the neighbourhood of Wycomb.

Blue Colours.

Azure. Smalt.

A blue pigment used in painting and in getting up fine linen. It is a glass, coloured with cobalt and reduced to powder. Several varieties of it are made, and it is sometimes sold under the names of *Saxon blue*, *Powder blue*, *King's blue*, *Emperor blue.*

No. 1.

Roast cobalt ore to drive off the arsenic; mix the residuary black oxide with as much oil of vitriol as will make it into a paste, and expose this, first to a moderate heat, then to a red heat for an hour. Reduce the resulting sulphate to powder, and dissolve it in water. To the solution add carbonate of potash, in small quantities at a time, until the precipitate formed no longer indicates the presence of iron. The whole of the iron being thus removed from the solution, the latter is to be filtered, and precipitated by means of a solution of silicate of potash, made as follows:—Mix 10 parts of potash, 15 parts of finely-ground flints or sand, and 1 part of powdered charcoal; put the mixture into a crucible, and expose it to a bright red heat for five or six hours; the melted mass, when cold, is to be powdered and dissolved in five or six times its weight of water. The silicate of cobalt which is precipitated constitutes the blue pigment.

No. 2.

Roast cobalt with three times its weight of sand, and an equal weight of potash, and reduce the fused mass, when cold, to powder.

Egyptian azure.

Carbonate of soda ℥xv, calcined flints ℥xx, copper filings ℥iij. Mix and fuse them together in a crucible for two hours, and when cold reduce to powder.

Cobalt blue. Chinese blue. Cobaltic ultramarine. Thenard's blue. Höpfner's blue. Louisa blue.

No. 1.

Pure moist hydrate of alumina, obtained by precipitation from alum by means of ammonia, is mixed with pure hydrated oxide of cobalt, in the moist state, as obtained by precipitation from nitrate of cobalt; the mixed oxides are dried, and subsequently calcined. The bright blue product is sold in small fragments as taken from the crucible, and also in fine powder.

No. 2.

Wash ℔j of zaffre to separate as much of the sand as possible; add to it ℥viij of nitric acid diluted with an equal quantity of water; digest for some hours, pour off the solution, and add more acid as long as anything is dissolved; evaporate the solutions nearly to dryness, so as to drive off the excess of acid; dissolve the salt in water, and filter it, then add a solution of phosphate of soda as long as any precipitate is formed; wash the violet-coloured subphosphate of cobalt, and mix it while still moist with eight times as much recently precipitated and still moist alumina; dry the mixture, and heat it to redness in a crucible.

No. 3.

Precipitate the nitrate of cobalt, formed, as directed in No. 2, with a solution of arseniate of potash, and mix the arseniate of cobalt with 16 times its weight of moist alumina.

No. 4.

Add recently precipitated and moist alumina to solution of nitrate of cobalt, dry, and calcine the mixture.

No. 5.

Add solution of ammonia to solution of alum and nitrate of cobalt, and treat the precipitate as in No. 2.

Chemic blue. Sulphate of indigo.

Indigo dissolved in from four to eight times its weight to the strongest oil of vitriol, and then diluted with water and neutralized with chalk or potash.

Liquid blue.

To one ounce of powdered Prussian blue, add an ounce or two of strong hydrochloric acid; allow the mixture to stand for 24 hours, then add eight or nine ounces of water.

Prussian blue. Berlin blue.

This pigment is made by calcining animal matter, such as dried blood, parings of horns, &c., with about one-eighth its weight of carbonate of potash in an iron retort, exposed to a dull red heat for seven or eight hours; lixiviating the product of this operation, and adding common green vitriol, or sulphate of iron, to the lixivium. The precipitate is sometimes treated with nitric acid, which increases the depth and brilliancy of the colour.

This, in its pure state, is said to constitute *Paris blue*. Mixed with other substances, such as alumina, gypsum, sulphate of barytes, clay, or starch, it forms the inferior kinds of *Prussian* and *Berlin blue;* also *Saxon blue, Erlangen blue, Mineral blue*, &c.

Saxon blue.

Dissolve ʒj of sulphate of iron, and ʒviij of alum, in one gallon of water, then add simultaneously solutions of prussiate of potash and of common pearl-ash, as long as any precipitate is formed. Collect and wash the precipitate.

Stone blue. Fig blue. Thumb blue. Crown blue. Mecklenburgh blue. Queen's blue.

Mix finely-powdered indigo with starch paste, and make it into cakes of the required size and form.

Mountain blue. Hambro' blue. Copper blue.

This is a mixture of carbonate of copper and chalk or lime, which is exposed to the air until it assumes the required colour.

Ultramarine. Cæruleum ultramontanum. Lapis-lazuli blue.

This beautiful and costly pigment is obtained from the mineral Lapis lazuli, which is broken into pieces about the size of a pea, heated to redness, quenched in water, and then ground to a fine powder. To ℔j of this powder is added ʒvj of yellow rosin, ʒij of common turpentine, ʒij of bees'-wax, and ʒij of linseed oil, previously mixed together, and the whole is made into a mass. This is kneaded in successive portions of luke-warm water, which it colours blue, and from which the ultramarine is subsequently deposited after allowing it to stand for some time. The first water is usually rendered dirty, and is rejected; the second yields the pigment of best quality. The process is founded on the property which the colouring matter of this mineral possesses, of adhering less firmly to the resinous cement used than the foreign matter with which it is associated. The finest specimens of Lapis lazuli are brought from China, Persia, and Great Bucharia.

Ultramarine ashes. Sander's blue.

The residue left after the extraction of *Ultramarine*, according to the preceding process; the resinous cement being burned away, and the ashes washed.

Artificial ultramarine. Azure blue. Vienna or *Meissner ultramarine.*

Mix together 1 part of porcelain clay, $1\frac{1}{2}$ part of sulphur, 1 part of anhydrous carbonate of soda, and keep the mixture at a dull red heat, in a covered crucible, as long as vapours are given off. On opening the crucible, it will be found to contain a spongy mass, part of which will be of a dark-blue colour, and this is to be separated from the other part. The results of this process are not uniform, yet this is considered the best process that has yet been published.

Blue verditer. Refiner's verditer.

No. 1.

The solution of nitrate of copper, obtained by the refiners in precipitating silver from nitric acid by heating it with copper, is poured while hot upon whiting moistened with water, and the mixture stirred until the whole of the copper is precipitated, when more of the nitric solution is added until the desired colour is produced.

No. 2.

The solution of nitrate of copper, as above, is precipitated with lime, which is added in the state of slaked lime. This precipitate, when nearly dry, is triturated with more lime, to develop the velvety blue colour, characteristic of verditer of the best quality. The process is frequently unsuccessful in unskilful hands.

Green colours.

Copper green. Blue bice. Blue carbonate of copper. Dicarbonate of copper.

This is a mineral carbonate of copper, found in mines, and prepared for paints by grinding and washing.

Brunswick green. Mountain green.

The pigments sold under these names vary very much in colour and in composition. They consist of native carbonates of copper mixed with calcareous or other heavy powders; or of artificial compounds, containing arsenite or other salts of copper. Gypsum, and sulphate of barytes, are frequently used in these mixtures. Some of the common green, sold under the above and other names, are merely mixtures of Prussian blue, or indigo and chrome yellow, with chalk and sulphate of barytes.

Vienna green. Sweinfurth green.

Dissolve ℔j of arsenious acid in water; mix ℔j of powdered verdigris with warm water, and add the former solution to it; let the mixture stand until the reaction is complete. Sometimes the ingredients are boiled together, when the process is expedited. The addition of more arsenic gives the product a yellowish tint. It may also be made by dissolving ℔j of arsenious acid in water, and ℔j of verdigris in vinegar, mixing the two solutions, and evaporating the liquor until it crystallizes.

Green verditer.

Is prepared in much the same way as *Blue verditer*, the difference in the colour resulting from differences in the proportions of the ingredients, or from slight and accidental circumstances not always under the control of the operator.

Scheele's green. Mitis green. Arsenite of copper.

Saturate a solution of carbonate of potash with arsenious acid, aided by the application of heat; then add this solution to a solution of sulphate of copper as long as any precipitate is formed. It is of a fine grass-green colour, and is used as a paint.

Sap green.

The juice of berries of buckthorn, of black alder, or of ever-green privet, 12 pints; lime water, 8 pints; gum arabic, 6 ounces. Evaporate until quite thick.

Iris green.

The juice of the petals of the iris added to quicklime.

Red colours.

Carmine.

A pigment made from cochineal, as follows:—

No. 1.

Boil ℔j of cochineal, and ʒj of bitartrate of potash in 4 gallons of pure distilled water, for 15 minutes; strain the decoction through flannel, add ʒj of alum, and ʒss of carbonate of potash, and again boil for five minutes; remove the liquid from the fire, and let it stand in glass or earthen vessels for two or three days, that the carmine may subside.

No. 2.

Boil ℔j ʒiv of cochineal, and 115 grains of carbonate of soda, in 4 gallons of soft water for 20 minutes; then remove the boiler from the fire, and add ʒvj of alum, and ʒj of bitartrate of potash; stir the mixture for a few minutes, let it stand for a quarter of an hour for the dregs to subside, then carefully decant off the clear liquor, strain it through a fine silk sieve, and add the whites of two eggs well beaten up. Sometimes the carmine will immediately separate, but at other times it is necessary to put the liquor again over the fire and heat it, but not to the boiling point.

No. 3.

Boil ℔j of cochineal, and ʒiijss of carbonate of potash, in 5 pails of water, for a quarter of an hour; remove the decoction from the fire, and stir in ʒj of alum; allow the solution to stand for a quarter of an hour that the dregs may subside, then decant the clear liquor, and put it again over the fire, at the same time adding ʒiijss of isinglass dissolved in 1 gallon of water, and strained. At the moment of ebullition the carmine will rise to the surface; the pan is now to be removed from the fire and left at rest that the carmine may subside.

It should be dried in a stove, at a temperature from 82° to 86° Fahr.

A wood or charcoal fire should be used in the process, as the effluvia from coal fires is said to be very injurious to the product.

Bloom of roses.

Carmine dissolved in liquor ammoniæ, and diluted with rose-water and spirit of wine.

Brazil wood lake.

Boil ℔j of Brazil wood in 4 gallons of water for 20 minutes; add ℔jss of alum, dissolved in water, and ℔ss of solution of tin; then precipitate with a solution of carbonate of potash or of soda, carefully avoiding excess of the alkali.

Carmine lake.

No. 1.

To the coloured liquor remaining after the preparation of carmine, some recently precipitated and still moist alumina is added, and the mixture stirred and heated a little, until the colouring matter is carried down with the alumina.

No. 2.

Add a solution of alum to the coloured liquor remaining after the preparation of carmine, and then a solution of carbonate of potash as long as any precipitate is formed. Solution of tin is sometimes added to brighten the colour.

Lac lake.

Boil fresh stick-lac in a solution of carbonate of soda, and then add a solution of alum as long as any precipitate is formed.

Madder lake.

Macerate 2 parts of best madder in 8 parts of cold water for a quarter of an hour, then put the madder into a cloth and press it strongly. Repeat this operation three times. The madder, after being thus exhausted of some of its colouring matter, is to be digested for three hours in a solution of 1 part of alum and 12 parts of water, with the heat of a water-bath; the liquor is then to be filtered, and a solution of carbonate of soda added in small quantities at a time to precipitate the lake.

Orange lake.

Boil ʒiv of arnotto, and ℔j of pearlash

in 1 gallon of water, for half an hour, then strain. Dissolve ℔jss of alum in 1½ gallon of water, add this to the former solution as long as any precipitate is formed.

Brown pink.

Boil ℔j of French berries, ℔ss of fustic, and ℔j of pearlash, with 1½ gallon of water, in a tinned or pewter boiler, for half an hour, and then strain while hot. Dissolve ℔jss of alum in 2½ gallons of water, and add this solution to the former as long as any precipitate is formed. Collect, wash, and dry the precipitate.

Dutch pink.

Boil ℔j of French berries, ℔ss of turmeric, and ℔j of alum, with 1½ gallon of water, for half an hour, and strain; then evaporate the liquor to 2 quarts, and add ℔iij of whiting. Collect, wash, and dry the precipitate. It should be of a bright golden yellow colour. Starch or white lead is sometimes substituted for whiting.

English pink.

Prepared as *Dutch pink*, but more whiting is used.

Rose pink.

Whiting coloured with a decoction of Brazil wood and pearlash. The colour is very fugitive. Alum or solution of tin is sometimes used to vary the colour.

Orange red. Sandix.

Made by calcining white lead; it has a brighter colour than red lead.

Red lead. Minium. Plumbi oxidum rubrum.

Made by roasting litharge in a reverberatory furnace. It is used in paints.

Brown red. Indian red. Colcothar. Chalcitis.

Under these names are sold the peroxide of iron obtained by calcining the salts of iron. The colour varies according to the circumstances under which the calcination is conducted. The true *Indian red*, *Terra Persica*, or *Ochra purpurea Persica*, is a mineral brought from Ormuz.—See *Ochre*.

Ruddle. Reddle. Red chalk. Red lumber-stone.

These names are applied to clay-iron ore—consisting of clay and oxide of iron—a mineral of a deep-red colour, intermediate between *Bole* and *Red ochre*, containing more oxide of iron than the former, and less than the latter. It is used for marking on wood, paper, &c., and is made into crayons. It is also sometimes used in paints.

Venetian red. Bolus veneta.

A kind of *Red ochre*, brought from Venice. It becomes harder and darker coloured by heating.

White colours.

Alum white. Baumé's alum white.

Mix ℔ss of honey with ℔j of alum; calcine the mixture in a shallow vessel, and heat it to whiteness; wash, dry, and powder the residue, which will be beautifully white, and suitable for use with oil.

White lead. Basic carbonate of lead.

Made by exposing sheet lead to the vapour of acetic acid in close chambers. Different varieties of this pigment have been distinguished according to the process by which they have been made. Thus, common vinegar, alegar, molasses vinegar, the refuse water of starch-makers, &c., have been used in the process, and the products distinguished as *Flake white*, *Nottingham white*, *Newcastle white*, *Grace's white lead*, *&c.*

Krems white.

Pure carbonate of lead.

Venice white.

Carbonate of lead; sulphate of baryta, p. æ.

Hamburgh white.

Carbonate of lead, 1 part; sulphate of baryta, 2 parts.

Holland white.

Carbonate of lead, 1 part; sulphate of baryta, 3 parts.

Wilkinson's white.

Made by grinding litharge with sea-water until the whiteness is no longer improved.

Pearl white. Ford's Spanish white.

Trisnitrate of bismuth.

Permanent white.

Artificial sulphate or carbonate of barytes, made by adding sulphate or carbonate of soda to solution of chloride of barium. This pigment possesses the advantage of not being affected by sulphuretted hydrogen.

Yellow colours.

Chrome yellow. Chromate of lead.

Obtained by precipitating nitrate of lead with chromate of potash.

Indian yellow.

This pigment is brought from the East Indies, and is said to be a concretion formed in the intestines of the camel.

King's yellow.

Sublimed orpiment, or sulphuret of arsenic.

Naples yellow.

No. 1.

Calcine together ℔ss of lead, ℔j of antimony, ʒj of alum, and ʒj of common salt.

No. 2.

Mix ʒxij of flake white, ʒij of diaphoretic antimony, ʒss of calcined alum, and ʒj of salammoniac, and calcine the mixture in a covered crucible, with a moderate heat, for three hours, so that at the end of that time it may be barely red hot.

Patent yellow. Chloride of lead.

Grind together 1 part of common salt, and 4 parts of litharge with water; expose the mixture for some time to a gentle heat, adding more water from time to time as evaporation takes place. Finally, wash the white chloride of lead which is formed, and heat it until it acquires a fine yellow colour.

Queen's yellow.

Turpith mineral, or sub-sulphate of mercury.

Yellow lake.

Persian or French berries are boiled with a solution of potash, and the colouring matter precipitated by means of alum in the same manner as *Orange lake*.

Ochre.

There are several native mixtures of argillaceous and calcareous earth and oxide of iron employed as paints and colours, under the generic name of *Ochre*, and which are distinguished from each other by differences in their colour, or in their places of origin. The difference of colour depends partly on the state of oxidation of the iron, and partly on the proportion of oxide of iron present; the colour is sometimes modified by the application of heat. *Ochres* are generally prepared for use by the process of elutriation, in the same way as chalk. The different varieties are distinguished as *Brown ochre*, *Red ochre*, *Yellow ochre*, *French ochre*, which is yellow, *Oxford ochre*, and *Roman ochre*, which are of a brownish-yellow colour. *Indian red* and *Spanish brown* may also be classed among the *Ochres*.

Liquid colours. *Lacca fluida.*

Blue.

No. 1.

Make a strong tincture of litmus, with a weak spirit.

No. 2.

To a strong tincture of litmus, made as No. 1, add a few drops of dilute solution of ammonia until the colour has become more purely blue.

No. 3.

Dilute Saxon blue, or sulphate of indigo,

with water, and neutralize the excess of acid with chalk.

Green.

No. 1.

Dissolve crystallized verdigris in water.

No. 2.

Dissolve sap-green in water, and add a little alum.

No. 3.

Dissolve equal parts of crystallized verdigris and cream of tartar in water, and add a little gum arabic.

Purple.

No. 1.

Add solution of carmine in ammonia to tincture of litmus.

No. 2.

Add a small quantity of alum to a decoction of logwood.

Red.

No. 1.

Boil Brazil wood in dilute acetic acid for a few minutes; strain, and add a little alum and gum arabic.

No. 2.

Add acetic acid to tincture of litmus until it assumes the proper colour.

No. 3.

Dissolve carmine in solution of ammonia, and add water and a little spirit.

Yellow.

No. 1.

Dissolve gamboge in water, and add a little alum and gum arabic.

No. 2.

Dissolve gamboge in equal parts of proof spirit and water.

No. 3.

Boil French berries in water, strain, and add alum and gum arabic.

No. 4.

Make a strong tincture of turmeric.

No. 5.

Dissolve arnotto in a weak ley of potash or soda.

CAKE WATER COLOURS.

These are made by rubbing any of the dry colours with gum-water and a little solution of isinglass, making them into a thick paste, and drying them in a mould.

CAKE OIL COLOURS.

The colours are first ground with a weak solution of mastic in oil of turpentine; they are then dried, put on a stone heated by a charcoal fire put under it, and ground with a mixture of 3 parts of spermaceti and 1 part of poppy oil. The paste is afterwards pressed into a mould and allowed to harden.

OIL COLOURS IN BOTTLES.

These are prepared in the same way as the cake oil colours, excepting that the spermaceti is omitted, or used in much smaller proportion.

SHOW COLOURS, FOR DRUGGISTS' SHOP WINDOWS.

Blue.

No. 1.

Sulphate of copper ℥j, sulphuric acid ℥ss, water ℥x.

No. 2.

Ammonio-sulphate of copper, ammonio-nitrate of nickel, (see No. 5,) and water.

No. 3.

Prussian blue, gr. x, oxalic acid gr. xx, water ℥xvj.

No. 4.

Dissolve nickel in diluted sulphuric acid, add ammonia in excess, and dilute with water.

No. 5.

Dissolve nickel in diluted nitric acid, add ammonia in excess, and dilute with water.

No. 6.

Dissolve Prussian blue in diluted hydrochloric acid, and dilute with water.

Green.

No. 1.

Sulphate of copper ℥ij, chloride of sodium ℥iv, water ℥xx.

No. 2.

Dissolve ℥j of nickel in ℥vj of nitric acid, and add Ov of water.

No. 3.

Dissolve nickel in dilute sulphuric acid, and dilute with water.

No. 4.

Dissolve sulphate of copper in water, and add bichromate of potash until the required colour is produced.

No. 5.

Dissolve ammonio-sulphate of copper in water, and add bichromate of potash until the required colour is produced.

No. 6.

Dissolve sulphate of copper in water, and add nitric acid until the required colour is produced.

No. 7.

Dissolve distilled verdigris in acetic acid and dilute it with water.

Lilac.

No. 1.

Dissolve zaffre (impure oxide of cobalt) in hydrochloric acid, filter, and add carbonate of ammonia in excess; to this add ammonio-sulphate of copper until the required colour is produced.

No. 2.

Dissolve zaffre in hydrochloric acid, filter, and add carbonate of ammonia in excess; to this add ammonio-nitrate of nickel (see *Blue*, No. 5) until the required tint is produced.

Orange.

No. 1.

Dissolve bichromate of potash in water until the required tint is produced.

No. 2.

The same as the last, but adding some oil of vitriol or hydrochloric acid.

Pink.

No. 1.

Dissolve ℥ij of zaffre in ℥vj of hydrochloric acid, filter, add solution of carbonate of ammonia in excess, then add f℥j of liquor potassæ, and dilute with water, to produce the required colour.

No. 2.

Nitrate of cobalt may be used, with carbonate of ammonia, in the same way as the last.

Purple.

No. 1.

Sulphate of copper ℥j, carbonate of ammonia ℥jss, water Oijss.

No. 2.

The last colour, with a small quantity of the *Pink* No. 1.

Red.

No. 1.

Macerate powdered cochineal in spirit of hartshorn, and dilute it with water.

No. 2.

Dissolve carmine in solution of ammonia, and dilute it with water.

No. 3.

Wash the best madder two or three times with cold water, then macerate it in solution of carbonate of ammonia, filter the solution, and dilute it with water.

No. 4.

Dissolve madder lake in solution of carbonate of ammonia.

Violet.

Ammonio-sulphate of copper, diluted with water, and enough of the pink colour No. 1 to produce the required tint.

Yellow.

Bichromate of potash ʒvj, carbonate of potash ʒiv, water ℥xvj.

CONDITUM AURANTII. *Candied orange peel.*

Ph. Suecica, 1845.

Orange peel is immersed in boiling water until it may be pierced with a straw. The white inner surface is then removed, and the pieces of peel are suspended on strings, and strong syrup poured over them. They are left in this for one or two

days, then put into another portion of strong syrup, and fresh sugar added to that which has been used. This process is continued until the peels have become sufficiently saturated with sugar.

Confectio amygdalæ. *Confection of Almond.*

Lond. Ph. 1851.

℞ Almond . . . . . ℥viij.
Powdered acacia . . ℥j.
Sugar . . . . . ℥iv.

Bruise the almond, previously macerated in cold water, and deprived of its coat, and rub through a fine metallic sieve; then, the other ingredients being added, beat all together until they are incorporated.

This confection will remain incorrupted a longer time, if the almond, previously made, baked and dried, and rubbed into a very fine powder, be mixed with the acacia and sugar separately rubbed together, and the mixed powder be kept in a stoppered vessel.

Edin. Ph. 1841.

The formula is the same as that of the Lond. Ph.

Med. Use.—℥j triturated with ℥j of distilled water forms an excellent emulsion, which is nutritive and emollient.

Confectio aromatica. *Aromatic confection.*

Lond. Ph. 1850.

℞ Cinnamon.
Nutmegs, of each . . . . ℥ij.
Cloves . . . . . ℥j.
Cardamoms . . . . . ℥ss.
Saffron . . . . . ℥ij.
Prepared chalk . . . . ℥xvj.
Sugar . . . . . lbij.

Distilled water, as much as may be sufficient. Rub together the dry ingredients into a very fine powder, and preserve in a stoppered vessel. But, as often as the confection is to be used, add f℥ij of water to each ounce of the powder, and mix all, until incorporated.

Edin. Ph. 1841. *Electuarium aromaticum.*

℞ Aromatic powder, 1 part.
Syrup of orange-peel, 2 parts.

Mix them and triturate them into a uniform paste.

Dubl. Ph. 1850.

℞ Aromatic powder . . . ℥v.
Dried saffron in fine powder . ℥ss.
Oil of cloves . . . . . f℥ss
Simple syrup . . . . f℥v.
Clarified honey, by weight . ℥ij.

Rub the aromatic powder with the saffron, add the syrup and honey, and heat them together until thoroughly mixed; lastly add the oil of cloves.

Med. Use. — Cordial and astringent. Generally used as a vehicle for more active medicines. It should not be given in combination with acids, acidulous salts, or metallic solutions, in consequence of the carbonate of lime which enters into its composition.

Dose.—gr. v to ℥j.

Remarks.—This is the modern representative of the old *Confectio Raleighana* and *Confectio cardiaca.*

Confectio aurantii. *Confection of orange peel.*

Lond. Ph. 1851.

℞ Orange peel, fresh, separated by a rasp . . . . . lbj.
Sugar . . . . . lbiij.

Pound the peel in a stone mortar with a wooden pestle, then, the sugar being added, pound again until incorporated.

Conserva aurantii. Conserve of orange peel.

Edin. Ph. 1841.

Grate off the outer rind of bitter oranges and beat it into a pulp, adding gradually thrice its weight of white sugar.

Med. Use. — Only employed for its agreeable flavour as a vehicle for nauseous medicines.

Confectio cassiæ. *Confection of cassia.*

Lond. Ph. 1851.

℞ Cassia pulp	℔ss.
Manna	ʒij.
Tamarind pulp	ʒj.
Syrup of roses	fʒviij.

Bruise the manna, then dissolve it in the syrup; afterwards mix in the cassia and tamarind pulp, and evaporate the moisture until a proper consistence is attained.

Med. Use.—A gentle laxative, well calculated for children.

Dose.—ʒj. to ʒj.

SYNONYME.

Diacasia cum manna.—Lond. Ph. 1721.

Confectio japonica. *Confection of catechu.*

Edin. Ph. 1841. *Electuarium catechu.*

℞ Catechu, kino, āā	ʒiv.
Cinnamon, nutmeg, āā	ʒi.
Opium, diffused in a little sherry	ʒiss.
Syrup of red roses, reduced to the consistence of honey	Oiss.

Pulverize the solids, mix the opium and syrup, then the powders, and beat them thoroughly into a uniform mass.

Dubl. Ph. 1850.

Confectio catechu compositum. (Electuarium catechu compositum.)

℞ Compound powder of catechu	ʒv.
Simple syrup	fʒv.

Add the syrup gradually to the powder, and mix them well together.

Med. Use.—Astringent. Employed in chronic diarrhœa, dysentery, and hæmorrhages.

Dose.—℈j to ʒij. One ounce of this electuary, prepared according to the Dubl. Ph., contains two grains and a half of opium.

Remarks.—The above formulæ may be considered as the representatives, in our modern Pharmacopœias, of the once celebrated *recipes* for *Confectio Damocratis* and *Theriaca Andromachi.*

Confectio damocratis. *Mithridatium. Mithridate, or Damocrates's confection.*

Lond. Ph. 1746.

℞ Cinnamon	ʒxiv.
Myrrh	ʒxj.
Agaric, Spikenard (*Nardus indica*), Ginger, Saffron, Seeds of treacle mustard (*Thlaspi arvense*), or Mithridate mustard (*Lepidium compestre*), Frankincense, Chio turpentine, āā	ʒx.
Camels' hay (*Juncus odoratus*), Costus (*Costus arabicus*), or in its stead Zedoary, Indian leaf (*Malabathrum folium*), or in its stead Mace, French lavender, Long pepper, Seeds of hartwort, Juice of the rape of cistus, Strained storax, Opoponax, Strained galbanum, Balsam of Gilead, or in its stead Expressed oil of nutmegs, Russia castor, āā	ʒj.
Poley-mountain, Water-germander, Fruit of balsam tree, or in its stead Cubebs, White pepper, Seeds of the carrot of Crete (*Daucus creticus*), Strained bdellium, āā	ʒvij.
Celtic nard, Gentian root, Leaves of dittany of Crete (*Amaracus dictamnus*), Red roses, Seeds of Macedonian parsley, Seeds of lesser Cardamoms, Seeds of sweet fennel, Gum arabic, Strained opium, āā	ʒv.
Root of sweet-flag, Root of wild valerian, Aniseed, Strained sagapenum, āā	ʒiij.
Spignel, St. John's wort, Juice of acacia, or in its stead Catechu, the Bellies of scinks, āā	ʒiiss.
Clarified honey, three times the weight of all the rest.	

Dissolve the opium first in a little wine, and then mix it with the honey made hot; in the meantime melt together in another

vessel the galbanum, storax, turpentine, and other ingredients of this kind, continually stirring them, that they may not burn; and when these are melted add the honey by degrees; last, when the mixture is nearly cold, add the rest of the species reduced to powder. (*See Confectio japonica.*)

Med. Use.—This confection was formerly reputed to contain the antidote for every known poison.

Theriaca andromachi. *Venice treacle. London treacle.*

Lond. Ph. 1746.

℞ Troches of squills, (Baked squills, ℥ij; Flour, ℥j; made into lozenges and dried) . . . . . ℔ss.
Long pepper, Strained opium, Dried vipers, āa . . . . . ʒiij.
Cinnamon, Balsam of Gilead, or in its stead Expressed oil of nutmeg, āā ℥ij.
Agaric, Orris root, Water-germander, Red roses, Seeds of navew, Extract of liquorice, āā . . . . ℥jss.
Spikenard, Saffron, Greater cardamoms, Myrrh, Costus, or in its stead Zedoary, Camels' hay, āā . . ℥j.
Cinquefoil root, Rhubarb, Ginger, Indian leaf, or in its stead Mace, Dittany of Crete leaves, Horehound, Calamint, French lavender, Black pepper, Parsley seeds, Olibanum, Chio turpentine, Valerian root, āā ʒvj.
Gentian root, Celtic nard, Spignel, Poley-mountain, St. John's wort, Ground pine, Creeping germander, Fruit of Balsam tree, or in its stead Cubebs, Aniseed, Fennel seed, Lesser cardamoms, Bishop's weed, Hartworth, Treacle mustard, Juice of rape of cistus, Catechu, Gum arabic, Storax, Sagapenum, Lemnian earth, or in its stead Armenian bole, Calcined green vitriol, āā . . ℥ss.
Creeping birthwort or Long birthwort, Lesser centaury, Carrot of Crete seeds, Opoponax, Strained Galbanum, Russia castor, Jew's pitch, or in its stead White amber, Sweet-flag root, āā . . . . . ℥ij.
Clarified honey, three times the weight of all the rest.

The ingredients are to be mixed in the same manner as in making the Mithridate.

Med. Use.—The same efficacy was ascribed to this compound as to the preceding.

Confectio opii. *Confection of opium.*

Lond. Ph. 1851.

℞ Hard opium, powdered . . ℥vj.
Long pepper, ... ℥j.
Ginger . . . . . ℥ij.
Caraways . . . . . ℥iij.
Tragacanth powder . . ℥ij.
Syrup . . . . . f℥xvj.

Rub the dry ingredients together to a very fine powder, and keep them in a covered vessel; and whenever the confection is to be used, add f℥xvj of syrup made hot, and mix.

Edin. Ph. 1841. *Electuarium opii.*

℞ Aromatic powder . . . . ℥vj.
Senega, in fine powder . . ℥iij.
Opium, diffused in a little sherry . . . . . ℥ss.
Syrup of ginger . . . . ℔j.

Mix them together, and beat them into an electuary,

Med. Use.—Aromatic and narcotic. Employed in flatulent colic and diarrhœa; in the latter complaint, usually as an adjunct to the chalk mixture.

Dose, gr. x. to ʒj. The *London* preparation contains gr. j of opium in gr. xxxvj of confection. The *Edinburgh* preparation contains gr. j of opium in gr. xliij of confection.

Remarks.—The above formulæ may be considered as the representatives, in our modern Pharmacopœias, of the once celebrated recipes for—

Philonium londinense. *Philonium Romanum. London philonium.*

Lond. Ph. 1746.

℞ White pepper, Ginger, Caraway seeds, āā . . . . ʒij.
Strained opium . . . . . ʒvj.
Diacodion (*syrup of poppies*), boiled to the consistence of honey, three times the weight of all the rest.

Mix carefully the opium, dissolved first in wine, with the syrup warmed, and then add the other species, reduced to powder. See *Confectio opii*.

Confectio piperis. *Confection of pepper.*

Lond. Ph. 1851.

℞ Black pepper, Elecampane, āā ℔j.
Fennel seed . . . . . ℔iij.
Honey,
Sugar, āā . . . . . ℔ij.

Rub the dry ingredients together, to a very fine powder, and keep them in a covered vessel; and whenever the confection is to be used, the honey being added, pound them until incorporated.

Edin. Ph. 1841. *Electuarium piperis.*

℞ Black pepper,
Liquorice root, in powder, āā ℔j.
Fennel seeds . . . . . ℔iij.
Honey,
White sugar, āā . . . . ℔ij.

Triturate the solids together into a very fine powder, add the honey, and beat the whole into a uniform mass.

Dubl. Ph. 1850. *Confectio piperis nigri.*

℞ Black pepper, in fine powder,
Liquorice root, in powder, āā ʒss.
Refined sugar . . . . ʒj.
Oil of fennel . . . . . fʒss
Clarified honey, by weight . ʒij

Rub the dry substances together into a very fine powder, then add the honey and oil, and beat them into a uniform mass.

Med. Use.—Recommended for fistulæ and piles. It is calculated to do harm in cases attended with inflammatory symptoms.

Dose.—ʒj to ʒiij two or three times a day.

Remarks.—The above confection has long been sold as a *nostrum*, under the name of *Ward's Paste for the Piles*, and has been esteemed an excellent remedy. Ward was originally a footman, and while travelling abroad with his master, is said to have obtained this and other recipes from the monks.

Confectio rosæ caninæ. *Confection of dog rose or hip. Conserva cynosbati.*

Lond. Ph. 1851. *Conf. rosæ caninæ.*

℞ Dog rose, stoned . . . . ℔j.
Powdered sugar . . . . ʒxx.

Rub the rose with the sugar gradually added, until incorporated.

Med. Use.—This is intended as a recipient for more active substances.

Edin. Ph. 1841. *Conserva rosæ fructus.*

Take any convenient quantity of hips, carefully deprived of their carpels; beat them to a fine pulp, adding gradually thrice their weight of white sugar.

Confectio rosæ. *Confection of rose.*

Confectio Rosæ Gallicæ Ph. 1836.

Lond. Ph. 1851.

℞ French rose, fresh . . . ℔j.
Sugar. . . . . ℔iij.

Pound the rose in a stone mortar; then, the sugar being added, pound again until incorporated.

Edin. Ph. 1841. *Conserva rosæ.*

Beat the petals of the rosa gallica to a pulp, gradually adding twice their weight of white sugar.

Dubl. Ph. 1850.

℞ Dried petals of the gallic rose ʒj.
Rose water . . . . . fʒij.
Refined sugar . . . . . ʒviij.

Macerate the petals in the rose water for two hours, add the sugar gradually, and beat them into a uniform mass.

or,

℞ Fresh petals of the Gallic rose . . . . . ℥iij.
Refined sugar . . . . ℥viij.

Rub the petals in a mortar, then add the sugar gradually, and beat them together till they are intimately mixed.

Med. Use.—A vehicle for more active substances.

Confectio rutæ. *Confection of rue.*

Lond. Ph. 1851.

℞ Rue freshly powdered,
Caraway,
Bay berries, āā . . . ℥iss
Prepared sagapenum . . ℥ss.
Black pepper . . . . ʒij.
Honey . . . . . ℥xvj.
Distilled water, as much as may be sufficient.

Rub the dry ingredients together into a very fine powder, then, the sagapenum and honey being melted in the water over a slow fire, gradually add the powder, and mix all.

Med. Use.—Antispasmodic and carminative. It is found beneficial in the convulsive affections of infants, in the form of enema.

Dose.—℈j to ʒj.

Confectio scammonii. *Confection of scammony.*

Lond. Ph. 1851.

℞ Scammony, powdered . . ℥jss.
Cloves, bruised,
Ginger, powdered, āā . . ʒvj.
Oil of caraway . . . . fʒss.
Syrup of rose . . . . q. s.

Rub the dry ingredients together to very fine powder, and preserve them; then, when the confection is required for use, the syrup being gradually poured in, rub again; lastly, the oil of caraway being added, mix them all.

Dubl. Ph. 1850.

℞ Scammony, in fine powder . ℥iij.
Ginger, in fine powder . . ℥iss.
Oil of caraway . . . . fʒj.
„ cloves . . . . . fʒss.
Simple syrup . . . . fʒiij.
Clarified honey, by weight . ℥iss.

Beat the powders with the syrup and honey into a uniform mass, then add the oils, and mix all well together.

Med. Use.—A warm cathartic.

Dose.—ʒss to ʒj, in a bolus.

Synonyme.

Electuarium Caryocostinum.—Lond. Ph. 1721.

Confectio seminis cinæ. *Confectio cinæ. Confection of Worm seed.*

Ph. Slesvico-Holsat. 1831.

Introduce ℥ij of worm seed into a pan heated over a gentle fire, add ℥iv of white sugar boiled to a tabular consistence, constantly moving the pan, and stirring the ingredients until they become dry. Pick out those seeds that are covered with sugar, and repeat the process to the others.

A process the same as the above is given in the Ph. Suecica, 1845.

Confectio sennæ. *Confection of senna.*

Lond. Ph. 1851.

℞ Senna . . . . . ℥viij.
Figs . . . . . lbj.
Prepared tamarind,
„ cassia,
„ prune, āā . . lbss.
Coriander . . . . . ℥iv.
Fresh liquorice, bruised . ℥iij.
Sugar . . . . . lbijss.
Distilled water . . . . Oiij.

Rub the senna with the coriander, and separate 10 ounces of the mixed powder with a sieve. Boil down the water, the fig and liquorice being added, to a half; then, press out and strain. Evaporate the strained liquor in a water bath, until from the whole 24 fluid ounces remain; then, the sugar being added, let a syrup be made.

Mix in the cassia, tamarind, and prune to this; and, a little while before they shall have cooled, the sifted powder being gradually added, constantly stir with a spatula, until incorporated.

Edin. Ph. 1841. *Electuarium sennæ.*

℞ Senna	℥viij.
Coriander	℥iv.
Liquorice-root, bruised	℥iij.
Figs	℔j.
Pulp of prunes	℔j.
White sugar	℔ijss.
Water	Oiij¼.

Powder the senna and coriander; sift out ten ounces of the mixture; boil the residue, with the figs and liquorice, in the water down to one-half; express and strain the liquor, and evaporate it to 24 ounces; dissolve in this the sugar, and add the liquid by degrees to the pulp of prunes; mix gradually the powder, and triturate the whole carefully to a uniform pulp.

Dubl. Ph. 1850.

℞ Senna, in fine powder	℥ij.
Coriander, in fine powder	℥j.
Oil of caraway	f℥ss.
Pulp of prunes	℥v.
,, tamarinds	℥ii.
Brown sugar	℥viij.
Water	℥ij.

Dissolve the sugar in the water, and beat the pulps with the syrup to a uniform consistence; having stirred in the powders and oil of caraway, mix all well together, and heat the mass thoroughly in a water-bath for 10 minutes.

Med. Use.—An efficient but mild purgative.

Dose.—℥j. to ℥ij.

SYNONYME.

Electuarium Lenitivum.—Lond. 1746. *Lenitive Electuary.*

Confectio sulphuris. *Confection of sulphur.*

Dubl. Ph. 1850.

℞ Sublimed sulphur	℥ij.
Bitartrate of potash	℥j.
Clarified honey, by weight	℥j.
Syrup of ginger,	
,, saffron, āā	f℥ss.

Triturate all the ingredients in a mortar, until they are intimately mixed.

Confectio terebinthinæ. *Confection of turpentine.*

Dubl. Ph. 1850.

℞ Oil of turpentine	f℥j.
Liquorice root, in powder	℥j.
Clarified honey, by weight	℥ij.

Rub the oil of turpentine with the liquorice powder, then add the honey, and beat them all together into a uniform consistence.

Conserva cochliariæ. *Conserve of scurvy grass.*

Ph. Austr. 1836.

℞ Fresh scurvy grass	℔j.
Powdered sugar	℔iij.

Pound the scurvy grass in a marble mortar with a wooden pestle, and add the sugar by degrees.

Conserva nasturtii. *Conserve of Water-cresses.*

Ph. Græca, 1837.

℞ Fresh water-cresses	1 part.
Sugar	3 ,,

Pound the water-cresses in a stone mortar, until reduced to a pulpy consistence, then add the sugar and mix them together.

Cornu. *Horn of the Cervus Elaphus.*

Lond. & Edin. Ph.

Cornu ustum. *Burnt horn.*

Lond. Ph. 1836.

Burn fragments of horns in an open vessel, until they become entirely white; then pulverise, and prepare them in the same manner as was directed concerning chalk.

Note.—When this has been well burnt, it is almost entirely dissolved in nitric acid; then lime is separated by oxalate of ammonia, whilst phosphoric acid is separated by nitrate of lead.

Lond. Ph. 1851.

Phosphate of lime, prepared from horn by fire.

Crayons.

Soft, fine-grained charcoal, such as that from the wood of the willow, is cut into pieces of the required size; these are put into a pipkin with melted wax, and kept over a slow fire for half an hour. They are then taken out and drained on blotting-paper in a warm place. Red, black, or other coloured chalk, may be treated in the same way.

Creasoton. *Creasote. Kreosote*

A colourless, transparent liquid, of high refractive power. Sp. gr. 1·037 to 1·06. Boiling point 397° Fahr. It dissolves in about 80 or 100 parts of water, and is very soluble in alcohol and in acetic acid. It possesses powerful antiseptic properties. It is obtained by distilling tar, when an oil passes over containing a good deal of creasote mixed with other substances; from these it is separated by adding carbonate of potash to saturate any acid present; the oil is then distilled with water, treated with dilute sulphuric acid to separate ammonia, again distilled, the oily product treated with caustic solution of potash of sp. gr. 1·12, which dissolves the creasote. This alkaline solution is supersaturated with diluted sulphuric acid, and the impure creasote which separates, is purified by repeated distillation and treatment with caustic potash and diluted sulphuric acid.

Lond. Ph. 1851.

An oxyhydrocarburet, prepared from pyroxylic oil.

Destitute of colour, with a peculiar odour, it is dissolved in acetic acid. The specific gravity is 1·046. When dropped upon bibulous paper, a boiling heat being applied for a little while, it flies off, and does not leave a perlucid stain.

Edin. Ph. 1841.

Note.—Colourless, and remains so under sunshine: density 1066: entirely and easily soluble in its own volume of acetic acid: a drop on white filtering paper heated for ten minutes about 212°, leaves no translucent stain.

Med. Use.—Principally used as a styptic to arrest hæmorrhage; as an application to indolent ulcers, to chronic venereal ulceration, to ulcerated chilblains, in chronic skin diseases, and as an injection in leucorrhœa.

Dose.—♏j to ♏ij gradually increased to ♏v, dissolved in at least an ounce or an ounce and a half of water. As an external application, see *Unguentum creasoti.*

Creta. *Chalk.*

Impure carbonate of lime.

Creta præparata. *Prepared chalk.*

Lond. Ph. 1851.

A friable carbonate of lime, rubbed into a very fine powder and elutriated.

Nearly the whole is dissolved in diluted hydrochloric acid, evolving bubbles of carbonic acid. This solution neither throws down anything on hydrosulphuric acid being added, nor, after it has been boiled, on the addition of ammonia, or lime water in excess.

Edin. Ph. 1841.

Take any convenient quantity of chalk; triturate it well in a mortar with a little water; then pour it into a large vessel nearly full of water, and agitate briskly; allow it to rest for a short time, and pour the milky water into another vessel, in which the fine suspended chalk is to be left slowly to subside; repeat this process with the coarsely powdered chalk which subsided quickly in the first vessel; collect the fine powder in the second vessel on a filter of linen or calico, and dry it.

Dubl. Ph. 1850.

℞ Chalk, ... ℔j
Water a sufficient quantity.

Reduce the chalk to a fine powder, and having triturated this in a large mortar with as much water as will give it the consistence of cream, fill the mortar with water, and stir well, giving the whole a circular motion; allow the mixture to stand for 15 seconds, and then decant the milky liquid into a large vessel. Triturate what remains in the mortar, adding as much water as was previously used, and after allowing it to settle for 15 seconds, again decant, and let this process be repeated several times; let the fine sediment which subsides from the decanted liquids, be transferred to a calico filter, and dried at a temperature not exceeding 212°.

Med. Use.—Antacid. Given as an astringent in various forms of diarrhœa. Employed extensively in tooth powders.

Dose—℈j to ℈ij.

Creta gallica. *French chalk. Steatite. Soap-stone.*

A soft magnesian mineral; 4 species of indurated talc, consisting of about 66 parts silica, 30 parts magnesia, and 4 parts oxide of iron.

Cup, antimonial. *Emetic cup.*

A small cup made of metallic antimony was formerly used for preparing emetic wine, by leaving wine in it for 12 hours.

Cup, Chinese purging.

Made of red sulphuret of arsenic; wine left in it over night, was drank in the morning as a purge.

Cuprum. *Copper.*

Symbol Cu. Equivalent 32.

This metal occurs abundantly in Cornwall, in combination with sulphur. Alloyed with about 30 *per cent.* of zinc, it forms *Brass.* Alloyed with different proportions of tin, it forms *Gun-metal*, *Bell-metal*, and *Speculum-metal;* and with zinc and tin, it forms *Bronze.*

Cupri ammonio-sulphas. *Ammonio-sulphate of copper.*

Lond. Ph. 1851.

℞ Sulphate of copper . . . . ℥j.
Sesquicarbonate of ammonia . ℥jss.

Rub them together until carbonic acid ceases to evolve; then dry the ammonio-sulphate of copper, wrapped in bibulous paper, in the air.

Pulverulent, azure colour, by heat it is changed into oxide of copper, sesquicarbonate of ammonia being first evolved, afterwards sulphate. It is dissolved in water. This solution changes the colour of turmeric to brown, and assumes a green colour on arsenious acid being added.

Edin. Ph. 1841. *Cuprum ammoniatum.*

℞ Sulphate of copper . . . ℥ij.
Carbonate of ammonia . . ℥iij.

Triturate them thoroughly together, till effervescence ceases, wrap the product in blotting-paper, and dry it first by folds of blotting-paper, afterwards by exposure to the air for a little, and preserve it in closely-stopped bottles.

Note.—This is sulphate of copper and ammonia: *ammoniacal sulphate of copper.*

Dubl. Ph. 1850.

Cupri Ammonio-sulphas.

℞ Sulphate of copper . . . ℥ij
Commercial sesquicarbonate of ammonia . . . . ℥iij.

Rub them together in a porcelain mortar until effervescence has ceased, then roll up the residue in bibulous paper, and place it upon a porous brick. When dry let it be enclosed in a bottle furnished with a well-fitted stopper.

Med. Use.—Chiefly employed in epilepsy.

Dose.—Gr. ½ twice a day, gradually increasing the dose.

Liquor cupri ammonio-sulphatis, Lond. Ph. 1851. *Cupri ammoniati solutio,* Edin. Ph. 1841.

Lond. Ph. 1851, & Edin. Ph. 1841.

℞ Ammonio-sulphate of copper . ℥j.
Distilled water . . . . . Oj.

Dissolve the ammonio-sulphate of copper in the water, and strain.

Cupri diniodidum. *Diniodide of copper.* Symbol Cu^2 I.

Dissolve 1 part of sulphate of copper, and 3 parts of sulphate of iron, in distilled water, and add a solution of iodide of potassium as long as a precipitate is formed. Wash this precipitate, and dry it with a gentle heat. It is of a dirty-white colour.

Remarks.—If sulphate of copper alone be used, only one-half of the iodine is precipitated, the other half being set free, as no protoiodide of copper exists.

Cupri sulphas. *Sulphate of copper. Roman vitriol. Blue vitriol. Blue copperas. Blue stone.*

This, which is the most abundant of the salts of copper, is obtained by the oxidation of the native sulphuret of copper, or copper pyrites. Sulphuret is roasted, and then exposed to the joint action of moisture and atmospheric air, under which circumstances the copper is converted into oxide, and the sulphur into sulphuric acid, which combine to form the salt. This is separated from impurities by lixiviation and crystallization.

The sulphate of copper of commerce is sometimes found to contain a large quantity of sulphate of iron, which arises from its having been made from pyrites containing iron and copper.

Lond. Ph. 1851.

Cupri sulphas. *Sulphate of copper.*

℞ Commercial sulphate of copper ℔iv.
Boiling distilled water, . . Oiv.

Pour the water on the sulphate, and apply heat, frequently shaking, until dissolved. Strain the solution whilst yet hot, and set aside that crystals may form. Evaporate the liquor poured off, that it may go again into crystals. Dry all these.

It is dissolved in water. Whatever ammonia throws down from this solution, an excess of ammonia dissolves again.

Curry powder.

No. 1.—(Good.)

℞ Turmeric powder . . . ℥vj.
Coriander-seed powder . . ℥viij.
Black pepper . . . . ℥iv.
Fœnugreek . . . . . ℥ij.
Ginger . . . . . ℥ij.
Cayenne pepper . . . . ℥ss.
Cummin-seed . . . . ℥ss.

Mix.

No. 2.

℞ Turmeric powder . . . ℥v.
Coriander-seed powder . . ℥iij.
Black pepper . . . . ℥j.
Ginger . . . . . ℥j.
Cayenne pepper . . . . ℥j.
Scorched mustard . . . ℥ij.
Mace . . . . . ℥ij.

Mix.

No. 3.

℞ Turmeric powder . . . ℥viij.
Coriander-seed powder . . ℥iv.
Black pepper . . . . . ℥j.
Cayenne pepper . . . . ℥j.
Scorched mustard . . . ℥ss.
Mace . . . . . ℥j.
Cinnamon . . . . . ℥j.
Cardamoms . . . . . ℥ij.

Mix.

Damson cheese.

Boil damson fruit with a small quantity of water, and afterwards rub the pulp through a sieve. To each pound of this pulp add a quarter of a pound of sugar, and boil them together until the mixture, on cooling, becomes firm.

Decoctum album. *Emulsio Cornu cervi.*

Ph. Suecica, 1845.

℞ Burnt hartshorn . . . . ℥ss.
Gum arabic . . . . . ℥ss.
Distilled water . . . . ℔j.
Syrup of almonds . . . ℥ss.

Boil the hartshorn and gum with the water, slightly, and when cold add the syrup.

Decoctum aloes compositum. *Compound decoction of aloes.*

Lond. Ph. 1851.

℞ Extract of liquorice . . . ʒvij.
Carbonate of potash . . . ʒj.
Aloes powdered,
Myrrh, powdered,
Saffron, āā . . . . . ʒiss.
Compound tincture of cardamoms . . . . . fʒvij.
Distilled water . . . . Ojss.

Boil down the liquorice, carbonate of potash, aloes, myrrh, and saffron, with the water, to a pint, and strain; then add the compound tincture of cardamoms.

Edin. Ph. 1841. *Decoctum aloes.*

℞ Socotrine or Hepatic aloes,
Powder of myrrh,
Saffron, āā . . . . . ʒj.
Extract of liquorice . . . ℥ss.
Carbonate of potash . . . ℈ij.
Compound tincture of cardamoms . . . . . fʒiv.
Water . . . . . fʒxvi.

Mix the aloes, myrrh, saffron, liquorice, and carbonate of potash with the water; boil down to 12 ounces: filter, and add the compound tincture of cardamoms.

Dubl. Ph. 1850. *Decoctum aloes compositum.*

℞ Hepatic aloes, in powder . . ʒiss.
Myrrh, in powder,
Saffron, chopped fine, āā . ʒj.
Pure carbonate of potash . ℈ij.
Extract of liquorice . . . ℥ss.
Water . . . . . ʒxiv.
Compound tincture of cardamoms, as much as is sufficient.

Rub the aloes, myrrh, and carbonate of potash together, then add the saffron and extract of liquorice, and boil for 10 minutes, in a covered vessel; cool, strain through flannel, and add of compound tincture of cardamoms as much as will make fʒxvj.

Med. Use.—This is a warm yet gentle cathartic, useful in habitual costiveness, dyspepsia, jaundice, and chlorosis.

Dose.—From one to two ounces.

SYNONYME.

Baume de vie.

Decoctum altheæ. *Decoction of marshmallow.*

Dubl. Ph. 1826.

℞ Herb and root of marshmallow, dried and bruised ʒiv.
Raisins, stoned . . . . ʒij.
Water. . . . . Ovij.

Boil down to 5 pints. Having strained the liquor, set it aside until the fæces have subsided, and decant.

Med. Use.—An agreeable diluent and demulcent. Employed in visceral inflammations and irritation.

Dose.—From Oj to Oiij may be taken in the course of the day.

Decoctum amyli. *Decoction of starch.*

Lond. Ph. 1851.

℞ Starch, ʒiv; Water, Oj. Rub the starch with the water gradually poured in, then boil a little while.

Med. Use.—Used for enemas, in diarrhœa and dysentery.

Decoctum arnicæ. *Decoction of arnica.*

Ph. Castr. Austr. 1841.

℞ Arnica root . . . . . ʒij.
Water . . . . . ℥ix.

Boil them, until reduced to ℥vi, and then strain.

Decoctum avenæ. *Gruel.*

Mix ʒj of oatmeal or groats with ℥iv of cold water, then add Oiij of boiling water. Boil for an hour, and strain through a hair sieve.

Med. Use.—The same as *Decoctum amyli.*

Decoctum cetrariæ. *Decoction of liverwort.*

Lond. Ph. 1851.

℞ Liverwort . . . . . ℥v.
Water . . . . . Ojss.

Boil down to a pint, and strain.

Dubl. Ph. 1850.

Decoctum Lichenis Islandici.

℞ Iceland moss . . . . . ℥j.
Water . . . . . Oiss.

Wash the moss in cold water, to remove impurities, then boil it for 10 minutes, in a covered vessel, and strain while hot. The product should measure about Oj.

Med. Use.—It is a mucilaginous or demulcent tonic.

Dose.—f℥j to f℥iv every four hours.

Decoctum chimaphilæ. *Decoction of wintergreen or pyrola.*

Lond. Ph. 1851.

℞ Wintergreen or pyrola . . ℥j.
Distilled water . . . . Oiss.

Boil down to a pint, and strain.

Dubl. Ph. 1850.

Decoctum Pyrolæ.

℞ Leaves of winter green, dried ℥ss.
Water . . . . . Oss.

Boil for 10 minutes in a covered vessel, and strain. The product should measure about 8 ounces.

Med. Use.—Diuretic, tonic, and occasionally laxative, and has been found very useful in dropsy combined with great debility.

Dose.—Two or three ounces three or four times a day.

Decoctum cinchonæ. *Decoction of cinchona bark.*

Lond. Ph. 1851.

℞ Yellow Cinchona, bruised . ℥x.
Distilled water . . . . Oj.

Boil for 10 minutes in a closed vessel, and strain the liquor whilst yet hot.

Edin. Ph. 1841.

℞ Crown, gray, yellow, or red cinchona, bruised . . ℥j.
Water. . . . . f℥xxiv.

Boil for 10 minutes, let the decoction cool, then filter it, and evaporate to f℥xvj.

Dubl. Ph. 1850.

℞ Peruvian Bark (Crown or pale) in coarse powder . . . . ℥ss.
Water . . . . . Oss.

Boil for 10 minutes, in a covered vessel, and strain while hot. The product should measure about eight ounces.

Decoctum cinchonæ pallidæ. *Decoction of pale cinchona bark.*

Decoctum cinchonæ rubræ. *Decoction of red cinchona bark.*

Lond. Ph. 1851.

Prepare these in the same way as Decoctum Cinchonæ is directed to be prepared.

Med. Use.—Tonic, anti-periodic; given when the powder is rejected by the stomach.

Dose.—℥j to ℥iv three or four times a day.

Decoctum cornus floridæ. *Decoction of dogwood.*

U. S. Ph. 1840.

℞ Dogwood bark, bruised . . ℥j.
Water . . . . . Oj.

Boil for ten minutes in a covered vessel, and strain the liquor while hot.

Med. Use.—Given as a tonic; and has been recommended as a substitute for Peruvian bark.

Dose.—Two fluid ounces.

Decoctum cydoniæ. *Decoction of quince* [seed.]

Lond. Ph. 1851.

℞ Quince [seeds] . . . . ℥ij.
Distilled water . . . . Oj.

Boil with a slow fire for ten minutes; afterwards strain.

Med. Use.—As an application to erysipelatous surfaces; in aphthous affections and excoriations of the mouth.

DECOCTUM DULCAMARÆ. *Decoction of woody nightshade.*

Lond. Ph. 1851.

℞ Woody nightshade, sliced . ℥x.
Distilled water . . . . Oiss.
Boil down to a pint, and strain.

Edin. Ph. 1841.

℞ Dulcamara, chopped down ℥j.
Water . . . . . f℥xxiv.
Mix them, boil, and concentrate by evaporation to 16 fluidounces.

Dubl. Ph. 1850.

℞ Twigs of woody nightshade, dried ℥ss.
Water . . . . . Oss.
Boil for 10 minutes, in a covered vessel, and strain. The product should measure about ℥viij.

Med. Use.—Diuretic and narcotic.

Dose.—From f℥iv to ℥j, three times a day.

DECOCTUM GALLÆ. *Decoction of galls.*

Lond. Ph. 1851.

℞ Bruised gall-nut . . . . ℥ijss.
Distilled water . . . . Oij.
Boil down to a pint, and strain.

DECOCTUM GRANATE. *Decoction of pomegranate.*

Lond. Ph. 1851.

℞ Pomegranate (rind) . . . ℥ij.
Distilled water . . . . Oiss.
Boil down to a pint, and strain.

DECOCTUM GRANATE RADICIS. *Decoction of pomegranate root.*

Lond. Ph. 1851.

℞ Pomegranate root, sliced, . ℥ij.
Distilled water . . . . Oij.
Boil down to a pint, and strain.

DECOCTUM GEOFFROYÆ INERMIS. *Decoction of cabbage tree.*

Dubl. Ph. 1826.

℞ Bark of the cabbage tree, bruised ℥j.
Water . . . . . Oij.
Boil down to a pint, and to the strained liquor add two ounces of syrup of orange peel.

Med. Use.—Cathartic and sedative. Chiefly used for the expulsion of lumbrici.

Dose.—From f℥ss to f℥ij.

DECOCTUM GUAIACI. *Decoction of guaiac.*

Edin. Ph. 1841.

℞ Guaiac turnings . . . . ℥iij.
Raisins . . . . . ℥ij.
Sassafras, rasped, and,
Liquorice root, bruised, āā . ℥j.
Water . . . . . Oviij.
Boil the guaiac and raisins with the water gently down to five pints, adding the liquorice and sassafras towards the end. Strain the decoction.

Med. Use.—In chronic rheumatism, and certain skin diseases.

Dose.—From ℥iv. to ℥xvi. in the course of the day.

DECOCTUM HÆMATOXYLI. *Decoction of logwood.*

Lond. Ph. 1851.

℞ Logwood, sliced, ... ʒxi.
Distilled water . . . . Oiss.
Boil down to one pint, and strain.

Edin. Ph. 1841.

℞ Logwood, in chips . . . ℥j.
Water . . . . . Oj.
Cinnamon, in powder. . . ʒj.
Boil the logwood in the water down to 10 fluidounces, adding the cinnamon towards the end, and then strain.

Dubl. Ph. 1850.

℞ Logwood, in small chips . . ℥j.
Water. . . . . Oss.
Boil for 10 minutes in a covered vessel, and strain. The product should measure about eight ounces.

Med. Use.—Astringent. Useful in diarrhœa and dysentery.

Dose.—℥j to ℥iij.

DECOCTUM HELICUM POMATIARUM COMPOSITUM. *Lac asininum artificiale. Compound decoction of snails. Artificial asses' milk.*

Ph. Hannov. nova, 1831.

℞ Snails from a vineyard . .	No. 6.
Hartshorn shavings . .	ʒiij.
Pearl barley	ʒiij.
Distilled water	℔ij.

Boil to make ℔j of strained decoction, and add, Syrup of maidenhair ʒj.

Mix.

DECOCTUM HORDEI. *Decoction of barley.*

Lond. Ph. 1851.

℞ Barley (pearl barley) . .	ʒijss.
Water	Oivss.

First wash away with water the foreign matters adhering to the barley seeds; afterwards, half a pint of the water being poured upon them, boil the seeds a little while. This water being thrown away, pour on [the seeds] that which is left, first made hot; then boil down to two pints and strain.

Dubl. Ph. 1850.

℞ Pearl barley	ʒiss.
Water	Oiss.

Wash the barley in cold water, reject the washings, and then boil for twenty minutes in a covered vessel, and strain.

Med. Use.—As a diluent in fevers and acute diseases.

Dose.—Ad libitum.

SYNONYME.

Barley water.

DECOCTUM HORDEI COMPOSITUM. *Compound decoction of barley.*

Lond. Ph. 1851.

℞ Decoction of barley . . .	Oij.
Figs, sliced	ʒijss.
Liquorice root, bruised . .	ʒv.
Raisins (stoned)	ʒijss.
Water	Oj.

Boil down to two pints, and strain.

Med. Use.—A useful demulcent in fever, phthisis, gonorrhœa, and strangury.

Dose.—Ad libitum.

DECOCTUM ICHTHYOCOLLÆ. *Decoctum lusitanicum. Decoction of isinglass.*

Codex Medic. Hamberg, 1845.

℞ Sarsaparilla	ʒiij.
Sassafras bark.	ʒj.
Sassafras wood	ʒj.
Boiling water	℔ix.
Isinglass	ʒiij.

Macerate the four first ingredients for 12 hours, then boil them, and add the isinglass dissolved in sufficient water to make ℔viij of the strained liquor. Sometimes ʒij of sulphuret of antimony, tied in a piece of linen, is suspended in the vessel during the boiling.

DECOCTUM LINI COMPOSITUM. *Compound decoction of linseed.*

Dubl. Ph. 1850.

℞ Linseed	ʒj.
Liquorice root, bruised . .	ʒss.
Water	Oiss.

Boil for ten minutes, in a covered vessel, and strain while hot.

DECOCTUM MALVÆ COMPOSITUM. *Compound decoction of mallow.*

Lond. Ph. 1836.

℞ Mallow, dried.	ʒj.
Chamomile, dried	ʒss.
Water	Oj.

Boil for a quarter of an hour, and strain.

Med. Use.—Employed for fomentations and enemata.

DECOCTUM MEZEREI. *Decoction of mezereon.*

Edin. Ph. 1841.

℞ Mezereon, in chips . . .	ʒij.
Liquorice root, bruised . .	ʒss.
Water	Oij.

Mix them, and boil down with a gentle heat to a pint and a half, and then strain.

Med. Use.—As a sudorific in secondary syphilis and chronic rheumatism,

Dose.—From f℥iv to f℥vi.

Decoctum myrrhæ. *Decoction of myrrh.*

Dubl. Ph. 1850.

℞ Myrrh	℥ij.
Water	℥viiiss.

Triturate the myrrh with the water gradually added, then boil for ten minutes in a covered vessel, and strain. The product should measure about eight ounces.

Decoctum papaveris. *Decoction of poppy.*

Lond. Ph. 1851.

℞ Poppy capsules, broken	℥iv.
Water	Oiv.

Boil for a quarter of an hour, and strain.

Edin. Ph. 1841.

℞ Poppy capsules, broken	ʒiv.
Water	Oiij.

Boil for a quarter of an hour, and strain.

Dubl. Ph. 1850.

℞ White poppy capsules, sliced or bruised	℥iv.
Water	Oiij.

Boil for ten minutes in a covered vessel, and strain.

Med. Use.—As an anodyne fomentation.

Decoctum pareiræ. *Decoction of pareira.*

Lond. Ph. 1851.

℞ Sliced pareira	℥x.
Distilled water	Oiss.

Boil down to one pint, and strain.

Decoctum quercus. *Decoction of oak bark.*

Lond. Ph. 1851. Edin. Ph. 1841.

℞ Oak bark, bruised	ʒx.
Water	Oij.

Boil down to a pint, and strain.

Dubl. Ph. 1850.

℞ Oak bark, bruised	℥iss.
Water	Oiss.

Boil for 10 minutes, in a covered vessel, and strain.

Med. Use.—Chiefly as a local astringent in the forms of gargle, lotion, or injection; as a gargle in relaxation of the uvula and in cynanche; as an injection in prolapse of the vagina, uterus, or rectum; it has been found serviceable when given internally in obstinate diarrhœas, and alvine hæmorrhages.

Dose.—℥j to ℥ij.

Decoctum sarzæ. *Decoction of sarza*, L. E. *Decoctum sarsaparillæ*, D.

Lond. Ph. 1851.

℞ Sarza, sliced	℥v.
Distilled water, boiling	Oiv.

Boil down to two pints, and strain.

Edin. Ph. 1841.

℞ Sarza, in chips	℥v.
Boiling water	Oiv.

Digest the root in the water for two hours at a temperature somewhat below ebullition; take out the root, bruise it, replace it, boil down to two pints, and then squeeze out the decoction, and strain it.

Dubl. Ph. 1850.

℞ Sarsaparilla root, sliced	℥ij.
Boiling water	Oiss.

Digest the sarsaparilla with the water for one hour, then boil for 10 minutes, in a covered vessel, cool and strain. The product should measure a little more than Oj.

Med. Use.—Alterative and demulcent.

Dose.—From f℥iv to f℥viij three or four times a-day.

Decoctum sarzæ compositum. *Compound decoction of sarza*, L. E. *Decoctum sarsaparillæ comp.* D.

Lond. Ph. 1851.

℞ Decoction of sarza, boiling hot, Oiv.
Sassafras, sliced,
Guaiacum wood, rasped,
Liquorice [root] bruised, āā . ʒx.
Mezereon [bark of the root] . ʒiij.

Boil for a quarter of an hour, and strain.

Edin. Ph. 1841.

The same as the London, except that half an ounce of mezereon is ordered.

Dubl. Ph. 1850.

℞ Sarsaparilla root, sliced . . ℥ij,
Sassafras root, in chips,
Guaiacum wood, turnings,
Liquorice root, bruised, of each. . . . . ʒij.
Mezereon root-bark . . . ʒj.
Boiling water. . . . . Oiss.

Digest all the ingredients with the water in a covered vessel, for one hour, then boil for 10 minutes, cool, and strain. The product should measure a little more than Oj.

Med. Use.—Diaphoretic and alterative; used in the treatment of secondary syphilis, chronic rheumatism, lepra, and other cutaneous affections.

Dose.—f ℥iv to f ℥vj three times a day.

Decoctum scoparii. *Decoction of broom.*

Dubl. Ph. 1850.

℞ Broom tops, dried . . . ℥ss,
Water. . . . . Oss.

Boil for 10 minutes, in a covered vessel, and strain. The product should measure about eight ounces.

Decoctum scoparii compositum. *Compound decoction of broom.*

Lond. Ph. 1851.

℞ Broom [fresh tops],
Juniper fruit, bruised,
Dandelion [root] bruised, āā ℥ss.
Distilled water . . . Oiss.

Boil down to a pint, and strain.

Edin. Ph. 1841.

℞ Broom tops, and
Juniper-tops, āā . . . ℥ss.
Bitartrate of potash . . ʒijss,
Water . . . . . Ojss.

Boil them together down to a pint, and then strain.

Med. Use.—As a diuretic in dropsy.

Dose.—f℥j to f ℥iv three or four times a day.

Decoctum senegæ. *Decoction of senega.*

Lond. Ph. 1851.

℞ Senega . . . . . ʒx.
Distilled water . . . . Oij.

Boil down to a pint, and strain.

Med. Use.—A stimulating expectorant in chronic bronchitis; it also acts as a diuretic; in large doses it is emetic and cathartic.

Dose.—f ℥j to f ℥iij three or four times a day.

Decoctum secalis cornuti. *Decoctum ergoti. Decoction of ergot of rye.*

℞ Ergot of rye . . . . . ʒj.
Water . . . . . ℥vj.

Boil for ten minutes in a lightly-covered vessel, and strain.

Dose.—One-third the above every half-hour until the whole is taken. In parturition. (Pereira.)

Decoctum taraxaci. *Decoction of taraxacum.*

Lond. Ph. 1851.

℞ Dandelion, bruised . . . ℥iv.
Distilled water . . . . Oiss.

Boil down to Oj, and strain.

Edin. Ph. 1841.

℞ Taraxacum, herb and root, fresh . . . . . ℥vij.
Water . . . . . Oij.

Boil together down to one pint, and then strain.

Med. Use.—Tonic, in chronic diseases of the digestive apparatus; it also acts as a purgative.

Dose.—f ʒj to f ʒiij.

DECOCTUM TORMENTILLÆ. *Decoction of tormentil.*

Lond. Ph. 1851.

℞ Tormentil, bruised . . .	ʒij.
Distilled water	Ojss.

Boil down to a pint, and strain.

Med. Use.—An astringent and tonic in chronic diarrhœa.

Dose.—f ʒj to f ʒiij, three or four times a day.

DECOCTUM ULMI. *Decoction of elm* (bark).

Lond. Ph. 1851.

℞ Elm [bark], fresh, bruised .	ʒijss.
Distilled water	Oij.

Boil down to a pint, and strain.

Med. Use.—Formerly employed in certain forms of skin disease, as in herpetic eruptions.

Dose.—f ʒiv to f ʒvj, three times a day.

DECOCTUM UVÆ URSI. *Decoction of whortleberry.*

Lond. Ph. 1851.

℞ Whortleberry (leaves), bruised	ʒj.
Distilled water	Ojss.

Boil down to a pint, and strain.

Dubl. Ph. 1850.

℞ Uva ursi leaves, bruised . .	ʒss.
Water	Oss.

Boil for 10 minutes, in a covered vessel, and strain. The product should measure about 8oz.

Med. Use.—A tonic, much recommended in affections of the urinary organs.

Dose.—f ʒj to ʒiij, three times a day.

DECOCTUM VERATRI. *Decoction of white hellebore.*

Lond. Ph. 1836.

℞ White hellebore [root], bruised	ʒx.
Distilled water	Oij.
Rectified spirit	f ʒiij.

Boil the hellebore in the water down to a pint, and when it has cooled, add the spirit, then press and strain.

Med. Use.—Used only externally as a lotion in scabies, tinea capitis, and other cutaneous diseases.

DECOCTUM ZITTMANNI FORTIUS. *Zittmann's decoction* (*strong*).

Ph. Borussica, 1847, and Ph. Austriaca, 1855.

℞ Sarsaparilla, cut . . .	℥xij.
Water	℔lxxij.
White sugar,	
Alum, in powder, āā . .	ʒvi.
Calomel	℥ss.
Cinnabar	ʒj.
Bruised aniseed,	
,, fennel seed, āā .	℥ss.
Senna	℥iij.
Liquorice root, bruised .	℥iss.

Digest the sarsaparilla in the water for 24 hours; then suspend the sugar, alum, calomel, and cinnabar, inclosed in a linen bag, in the liquor, and boil it until reduced to 24 pounds, adding the other ingredients towards the end of the process. Finally press, strain, and, after some time, decant the liquor.

The *Ph. Suecica*, 1845, gives a formula the same as the above, but directs the resulting decoction to be put into bottles containing ℔j each.

In the *Codex Medicamentarius Hambergensis*, 1845, the formula differs, inasmuch as only 24 pounds of water are directed to be used, and it is ordered to be boiled until reduced to 16 pounds. The resulting decoction is directed to be put into eight bottles.

SYNONYME.

Decoctum Sarsaparillæ Compositum forte.

DECOCTUM ZITTMANNI MITIUS. *Zittmann's decoction*, (*weak.*)

Ph. Borussica, 1847, and Ph. Austriaca, 1855.

℞ The residue left from ℔xxiv. of the *strong* decoction.
Sarsaparilla, cut . . . ℥vj.
Water . . . . . ℔lxxij.
Lemon peel, bruised,
Cinnamon bark, bruised,
Cardamoms, bruised,
Liquorice root, bruised, āā ℥iij.

Boil the residue of the strong decoction, with the water and the sarsaparilla, until reduced to 24 pounds, adding the other ingredients towards the end of the process. Finally press, strain, and after some time decant the liquor.

The *Ph. Suecica*, 1845, gives a formula which differs only from the foregoing in ordering ℥viij. of lemon peel, and ℥vj. of liquorice root.

In the *Codex Medicamentarius Hambergensis*, 1845, the formula differs only from that of the Ph. Borussica in ordering 24 pounds, instead of 72 pounds of water, and ℥vj. instead of ℥iij. of liquorice root, and in directing it to be boiled until reduced to 16 pounds, and then put into eight bottles.

SYNONYME.

Decoctum Sarsaparillæ Compositum tenure.

Med. Use.—A very small portion of mercury was detected in this decoction by Wiggers. It may be drank freely, and has been given with advantage in similar cases to those in which our decoction of sarsaparilla is administered.

Dentifrice. (From *dens*, a tooth, and *frico*, I rub.)

Tooth powders.

No. 1.

℞ Precipitated chalk . . . ℥j.
Powdered camphor . . ℥ij.
Mix. This should be kept in a bottle.

No. 2.

℞ Powdered Castile soap,
„ orris-root, āā . . ℥ij.
„ cuttle-fish bone,
Prepared chalk, āā . . . ℥iij.
Oil of cloves,
Essence of lemons, āā . gtt. xx.
Mix.

No. 3.

℞ Powdered cuttle-fish bone,
Prepared chalk, āā . . . ℔j.
Powdered orris-root . . . ℔ ss.
„ dragon's blood . ℥j.
Oil of cloves,
Essence of lemons, āā . . ʒj.
Carmine or lake, q. s. to colour it.
Mix.

No. 4.

℞ Cream of tartar . . . ℥ij.
Alum . . . . . ʒj.
Powdered cochineal . . ℈ij.
Essence of roses . . . ʒss.
Mix.

No. 5.

℞ Powdered talc, or French chalk . . . . . ℥ij.
Bicarbonate of soda . . . ℥ss.
Essence of roses . . . . ʒss.
Mix.

No. 6.

℞ Cream of tartar . . . . ℥ij.
Powdered orris-root . . . ℥j.
„ myrrh . . . ℥ss.
Dragon's blood . . . . ℥ss.
Mix.

No. 7.

℞ Powdered bark . . . . ℥j.
„ myrrh,
„ rhatany-root,
„ orris-root, āā . ℥ss.
Mix.

No. 8.

℞ Powdered charcoal . . . ℥ij.
„ bark,
„ myrrh, āā . . ℥ss.
Mix.

Tooth pastes.

No. 1.

℞ Precipitated chalk . . . ℥j.
Powdered myrrh,
„ rhatany-root, āā ʒij.
„ orris root . . ʒj.
Honey of roses, q. s. to form a paste.

No. 2.

℞ Cream of tartar . . . . ℥j.
Powdered orris-root,
„ red roses, āā . . ℥ss.
Oil of cloves . . . . gtt. x.
Honey of roses, q. s. to form a paste.

DEPILATORY. (From *de*, of, and *pilus*, the hair.)

Any application for removing hair from the skin. The use of most of the preparations sold for this purpose is attended with some danger.

No. 1.

Colley's depilatory.

℞ Quick lime	. . . .	30 parts.
Orpiment	. . . .	12 „
Sulphur	. . . . .	4 „
Nitre	. . . . .	4 „
Soap lees	. . . . .	125 „

Evaporate to the consistence of cream.

This requires to be used with the greatest possible care. It is a powerful caustic, and destroys the texture of the hair, but acts with equal energy on the skin.

No. 2.

Delcroix's depilatory.

℞ Quick lime	. . . .	30 parts.
Orpiment	. . . . .	4 „
Powder gum	. . . .	60 „

Mix.

This should be kept in a closely-stopped bottle; when used, it should be mixed with water, so as to form a paste, which is applied to the hair, and allowed to remain there for five or ten minutes, when the hair is removed with the back of a knife. The proportion of orpiment is sometimes increased.

No. 3.

Plenck's depilatory.

℞ Quick lime	. . . .	16 parts.
Orpiment.	. . . .	1 „
Starch	. . . . .	10 „

Mix, and keep in a closely-stopped bottle. This is used in the same way as *Delcroix's depilatory*.

No. 4.

Turkish erusma

℞ Quick lime	. . . .	8 parts.
Orpiment	. . . . .	1 „

Mix with white of egg and soap lees, so as to form a paste, which is to be used in the same way as No. 2 or No. 3.

No. 5.

The best and safest *depilatory* is a strong solution of sulphuret of barium, made into a paste with powdered starch, and used in the same way as No. 2.

This should be used soon after mixing it, as it loses its efficacy if long kept.

DEXTRINE. *British gum.*

A substance possessing the properties of gum, for which it is, in some cases, substituted. It is a product resulting from the action of heat, diastase, or dilute acids, on starch. For use in the arts, it is generally obtained by exposing dry potato-starch to a temperature of about 400° Fahr., until it has acquired a yellowish tint, and has become soluble in cold water. A small quantity of hydrochloric acid is sometimes added to the starch before heating it. The name *dextrine* is taken from its action on a ray of polarized light, the plane of which it turns towards *the right hand*.

DIACODION. *Diacodium. Syrupus e Meconio.* (From διὰ, and κωδία, a poppy-head.)

Old names for Syrup of poppies.

DIAGRYDIUM. Corrupted from *Diacrydium*, or Scammony.

DIAPENTE. *Pulvis diapente.* (From διὰ, *and* πεντε, *five.*)

A tonic powder given to horses. Literally, a medicine composed of five ingredients.

No. 1.

℞ Gentian, Bay berries, Aristolochia root, Myrrh, and Ivory dust, of each equal parts. (Edin. Ph. 1744.)

No. 2.

℞ Turmeric powder	. . .	℔iv.
Gentian powder	. . . .	℔ij.
Bay berries	. . . . .	℔ij.
Mustard	. . . . .	℔iij.

Mix.

No. 3.

℞ Gentian powder . . . . ℔iv.
Bay berries . . . . . ℔ss.
Mix.

This last is the formula most frequently adopted.

DIASCORDIUM. (Frim διὰ, and σκορδιον, the water germander.) *Electuarium e scordio.*

This electuary, which was formerly in high repute as an antipestilential, has been replaced, in English pharmacy, by the Electuarium catechu. See also *Electuarium scordii*, Ph. Suecica.

DRAGES. *Dragées. Sugar-plums.*

This, as a method of administering medicines, is of comparatively recent introduction. There are several different kinds of *Drages*, or *Sugar-plums*.

1st. *Drages, the centres or nuclei of which are almonds, or some seeds or fruit.*

In making these, a copper pan, of a hemispherical form is suspended from the ceiling by a cord attached to the two handles, over a furnace or charcoal fire. The pan is first slightly warmed; and the almonds or seeds being put in, a portion of syrup is added, and the whole rubbed together with the hand of the operator, until each seed is covered with a coating of syrup; powdered sugar, or starch, or a mixture of the two, is then sprinkled over them, and this is equally distributed over the surface of each seed by giving a dexterous motion to the pan. The *drages* are then put on to a sieve, and dried in a stove. The process is repeated until the coating of sugar or starch is sufficiently thick. This method does not succeed well unless several pounds of ingredients be put into the pan at a time. Ten or twelve pounds is a good quantity to operate upon.

2nd. *Drages, the centres or nuclei of which are pills or boluses.*

These are made in the same way as the preceding. Pills or boluses of copaiba solidified with hydrate of lime or magnesia, are sometimes coated in this way.

3rd. *Drages, the centres or nuclei of which consist of a liquid.*

The following is the ingenious method by which these are made:—A tray is filled with finely-powdered starch, the surface of which is made smooth and even, and impressions are made in the starch by means of a mould, representing the form of the intended *drages;* a syrup is then prepared with the best white sugar, which is concentrated by boiling to a point midway between that required for barley-sugar and ordinary syrup; this is removed from the fire while boiling, and a small quantity of flavoured spirit, containing no acid, is added without stirring the syrup, the renewed ebullition which this addition occasions, causing sufficient admixture of the ingredients; the syrup thus prepared, as soon as the ebullition has ceased, is poured into the cavities in the starch, and some more powdered starch being sprinkled over the surface, the tray is put into a warm place, that the syrup may crystallize; after an hour or two the crystallized sugar will be found to have formed a perfect shell to each of the *drages*, while the uncrystallized sugar and the spirit are enclosed in their centres.

4th. *Drages, which have no separate nucleus.*

In making these, the suspended pan is used, as in the 1st and 2nd, but powdered sugar is substituted for the nuclei employed in those cases. *Nonpareils* and *Homœopathic globules* are made in this way.

DRAGÉES MINERALES. *Drages for extemporaneously preparing artificial mineral waters.*

Dry tartaric acid and sesquicarbonate of soda, together with the other ingredients required for the intended mineral water,

are mixed together in a mortar, and these are quickly formed into a paste with syrup or mucilage, divided into drages of a proper size, and dried. When used, one of the drages is dropped into a glass of water, and allowed slowly to dissolve, the disengaged carbonic acid being partly retained by the water.

Dragon roots, *for cleaning the teeth.*

Pieces of common cane, having one of their ends formed into a kind of brush by splitting and beating the fibres, are sold under the above name for the purpose of brushing, and, as some fancy, whitening the teeth. They are sometimes dyed red by dipping them into a decoction of dye-wood.

The decorticated roots of the grape vine, and marsh-mallow roots, are also prepared and used for a similar purpose, under the names of *Prepared vine roots*, and *Prepared marsh-mallow roots*.

The practice of using certain woods and roots for cleaning and whitening the teeth appears to prevail in some foreign countries, such as South America, where the *Cornus florida* and other plants are thus employed.

Dyes.

Nankeen dye.

This is made by boiling arnotto and carbonate of potash in water, about one ounce of each to a pint of water; but the proportions are varied according to the shade of colour required. It is used for restoring the colour of faded nankeen clothing.

Pink dye.

℞ Washed safflower . . .	ʒij.
Carbonate of potash . .	gr. xviiij.
Spirit of wine . . .	ʒvij.
Water	℥ij.

Macerate for a day, then add enough distilled vinegar or lemon-juice to produce a fine rose colour, and strain.

Used to die silk stockings, and as a cosmetic.

Hair dyes.

Several compositions are used for dyeing the human hair on the head; the following are some of the best of them:—

No. 1.

Expose good quick-lime to the air until it has slaked and fallen to a fine powder; it will now consist of *Hydrate* and *Carbonate of lime*, fit for use in the following mixture:—

℞ Lime slaked in the air . .	2 parts.
White lead in powder . .	1 part.

Mix, and preserve it in a bottle.

This powder, when used, is mixed with water or skimmed milk, so as to be of the consistence of thick cream; it is laid on the hair with a brush, and a comb passed through to insure its coming in contact with every part; an oiled-silk cap is then put over it, to prevent the evaporation of the moisture. After allowing it to remain in this state for four or five hours, the cap is removed, and the powder washed out of the hair. The longer the dye is left on the hair, the darker will be the colour produced by it.

Caustic slaked lime, diluted with one-third its weight of starch, or calcined oyster-shells, are sometimes substituted for the lime slaked as above directed.

There is always an unnatural shade of redness in the colour produced by this dye.

No. 2.

℞ Acetate of lead	℥ij.
Prepared chalk	℥iij.
Quick-lime, slaked . . .	℥iv.

Water, sufficient to reduce it to the consistence of thick cream. To be used in the same way as No. 1.

No. 3.

℞ Litharge	℥ij.
Quick-lime, slaked . . .	℥j.
Powdered starch	℥j.
Solution of potash	ʒij.

Water sufficient to reduce it to the consistence of a thick cream. To be used in the same way as No. 1.

Nos. 2 and 3 are subject to the same objection as No. 1, in regard to the

colour produced. They answer better for a jet black than for any shade of brown.

No. 4.

℞ Nitrate of silver . . . . ʒj.
Distilled water . . . . ʒj.
Sap-green, sufficient to colour it.

This is applied to the hair by means of a fine-toothed comb. It must not be allowed to touch the skin, or it will stain it as well as the hair.

No. 5.

℞ Hydrosulphuret of ammonia . ʒj.
Solution of potash. . . . ʒiij.
Distilled water . . . . ʒj.
Mix, and label "Solution No. 1."

℞ Nitrate of silver . . . . ʒj.
Distilled water . . . . ʒij.
Mix, and label "Solution No. 2."

The "Solution No. 1" is first applied to the hair with a tooth-brush, and the application continued for fifteen or twenty minutes. The "Solution No. 2" is then brushed over, a comb being at the same time used to separate the hairs, and allow the liquid to come in contact with every part. If the stain produced is not sufficiently dark, the process must be repeated.

No. 6.

℞ Liquor potassæ,
Distilled water, āā . . . Oj.
Mix, and pass sulphuretted hydrogen gas through the solution until it is saturated; then take
Of this solution . . . . ʒxx.
Liquor potassæ . . . . . ʒiv.
Mix, and label, "Solution No. 1."

℞ Nitrate of silver . . . . ʒj.
Distilled water . . . . ʒij.
Mix, and label, "Solution No. 2."

Use these solutions in the same way as is directed for No. 5.

All the shades of colour resulting from the use of Nos. 5 and 6 are unexceptionable. These are, in fact, the best hair dyes that have hitherto been used.

No. 7.

℞ Nitrate of silver . . . . ʒij.
Cream of tartar . . . . ʒij.
Solution of ammonia . . . ʒiv.
Lard . . . . . ʒss.
Mix. This is to be applied with a comb and hard tooth-brush, taking care not to touch the skin.

Note.—It is necessary, before applying any of these hair-dyes, that the hair should be well cleaned and freed from grease, by washing it in a weak solution of carbonate of soda, or with soap and water.

Eau de Cologne.

No. 1.

℞ Oil of bergamot . . . ʒiij.
„ Lemons . . . . ʒij.
„ Lavender. . . . ʒiijss.
„ Neroli . . . . ʒijss.
„ Origanum . . . ʒij.
„ Rosemary . . . ʒj.
Essence of vanilla . . . ʒij.
Musk . . . . . gr. x.
Rectified spirit . . . . Oxiij.
Rose water . . . . . Oij.
Orange-flower water . . Oj.
Macerate for 14 days, and filter.

No. 2.

℞ Oil of bergamot . . . ʒiij.
„ Lemons . . . ʒij.
„ Lavender . . . gtt. xxv.
„ Neroli . . . . gtt. xv.
„ Origanum . . . gtt. x.
Rectified spirit . . . Oij.
Mix.

No. 3.

℞ Oil of bergamot,
„ Lemons, āā . . ʒj.
„ Lavender,
„ Neroli āā . . . gtt. xxx.
Rectified spirit . . . Oj.
Mix.

No. 4.

℞ Oil of bergamot,
„ Cedrat, āā . . . gtt. xx.
„ Lemons . . . . ʒj.
„ Neroli . . . . ʒss.
Honey water . . . . ʒj.
Rectified spirit . . . . Oj.
Mix.

No. 5.

℞ Oil of bergamot,
„ Lemons
„ Citron,
„ Orange peel, āā . . ʒij.

Oil of Cedrat,
,, Rosemary, āā . . ʒj.
,, Lavender,
,, Neroli, āā . . . ʒss.
,, Cinnamon . . . gtt. xv.
Rectified spirit . . . . Oiij.

Mix, and macerate for a week; then distil with the heat of a water-bath, and add,

Honey water . . . . . Oss.

Mix.

Eau de luce.

℞ Oil of amber . . . . ʒij.
White soap . . . . . gr. xv.
Balsam of Mecca . . . gr. xv.
Rectified spirit . . . . fʒvj.

Macerate for eight days, and then filter. Add fʒj of this tincture to fʒij of solution of ammonia, sp. gr. 920.

See also *Tinct. ammoniæ composita.*—*Lond. Pharm.*

Eau medicinale d'husson.

This is generally supposed to be a tincture of colchicum made with sherry wine, as follows:

℞ Colchicum cormi. . . . ʒij.
Sherry wine . . . . . fʒviij.

Macerate for a week, and strain.

Dose.—From ten to forty drops.

Eau de rabel. *Alcohol sulfurique. Acide sulfurique alcoolisé.*

℞ Alcohol (sp. gr. 850) . . 3 parts,
Sulphuric acid (sp. 1·845) 1 part,
by weight.

Add the acid to the alcohol, stirring them together with a glass rod.

The mixture will consist of sulphovinic acid, sulphuric acid, spirit, and water.

The Acid Elixir of Haller is made with equal parts, by weight, of alcohol and sulphuric acid, mixed as above.

The Acid Elixir of Dippel is made with 5 parts of alcohol and 1 of sulphuric acid, coloured with saffron and animal kermes.

These preparations are employed as astringents and antiseptics, in doses of a few drops, in some aqueous menstruum.

Egg flip.

℞ Good beer . . . . . Oj.
Eggs . . . . . No. 3.
Sugar . . . . . ʒij.
Nutmeg and ginger. . . q. s.

Beat the eggs with half the beer and the sugar, then beat them over the fire nearly to the boiling point, and add the remainder of the beer and the spice.

Elæosacchara. *Elæosaccharums.*

Ph. Græca, 1837.

Twenty parts of powdered sugar are to be mixed with one part of any essential oil.

Ph. Borussica, 1847.

One ounce of powdered sugar is to be mixed with 24 drops of any essential oil.

Elæosaccharum anisi.

Ph. Austr. 1855.

℞ Oil of aniseed . . . . gtt.iij.
White sugar . . . . ʒj.

To be rubbed together in a mortar.

Elæosaccharum aurantiorum.

Ph. Austr. 1855.

A whole orange is to be rubbed with a piece of sugar until the surface of the sugar is impregnated with the volatile oil of the peel; this is then cut off, dried in the air, and powdered in a mortar.

Elæosaccharum vanillæ.

Ph. Austr. 1855.

℞ Vanilla sliced . . . . ʒss.
White sugar . . . . ʒi.

Rub in a mortar to a fine powder.

Elaterin.

The active principle of elaterium. It may be obtained in several different ways.

(1.) Evaporate an alcoholic tincture of elaterium to a syrupy consistence, and then pour it into boiling distilled water, when the elaterin, not quite pure, will separate in the form

of a white crystalline precipitate. This may be further purified, by dissolving it in spirit and again precipitating in the same way.

(2.) Evaporate an alcoholic tincture of elaterium to the consistence of hard extract, and treat this with pure ether, when the elaterin will remain undissolved. It may be dissolved in spirit, and crystallized.

(3.) Evaporate an alcoholic tincture of elaterium to the consistence of a thin syrup, and pour this into a mixture of equal parts of liquor potassæ and water, at a boiling temperature. The elaterin will separate in small silky crystals as the liquor cools.

Med. Use.—Employed in the same cases as elaterium.

Dose.—One-sixteenth to one-twelfth of a grain.

Elaterium.

Strictly according to the London Pharmacopœia, the term "*Elaterium*" signifies the fruit of *Ecbalium officinarum*, or *Momordica elaterium*, in the fresh but not yet ripe state. The term is, however, generally understood to apply to the dried feculence of the juice of the fruit, and this is the meaning of the term as used in the Edinburgh and Dublin Pharmacopœias. In the London Pharmacopœia, this feculence is called *Extractum elaterii*, and this name, as well as elaterium, is used in the Edinburgh Pharmacopœia.

Electropunctura. *Electropuncture. Electropuncturation.*

This consists in a union of acupuncture and electricity. The operation of acupuncturation is performed in the usual way, either with one or with several needles, and an electrical current is then passed through them.

Acupunctura. *Acupuncture. Acupuncturation.*

This operation consists in the introduction of needles into different parts of the body, with the view of removing or mitigating disease. It is an ancient mode of treatment, which has been revived in modern times.

Needles are employed which are very fine, well polished, and sharp pointed, and usually from two to four inches long. They are sometimes of gold, silver, or platinum, but more frequently of steel. When of the last-named metal they are heated to redness, and allowed to cool slowly, so as to destroy their brittleness. The needle is introduced into the part affected by a particular rotatory movement, accompanied by slight pressure, and is allowed to remain in for a length of time, varying from a few minutes to an hour or two.

Electuarium Scordii. *Diascordium.*

Ph. Suecica, 1845.

℞ Opium	℥iss.
Tormentil root,	
Pichurine beans (sassafras nuts),	
Catechu	āā ℥ij.
Herb of water germander (Teucrium scordium)	℥iij.
Honey	℥xxviij.

First rub the opium with Malaga wine, then add the honey, and the rest of the ingredients in fine powder.

℈j contains gr. j. of opium.

Elixir acidum Halleri. *Acid elixir of Haller.*

Ph. Saxonica, 1837.

Drop purified sulphuric acid into a large flask, containing an equal weight of rectified spirit, so that the mixture becomes hot. To be kept in a bottle, with a glass stopper.

Ph. Norvegica, 1854.

℞ Rectified spirit	4 parts.
Sulphuric acid, concentrated	1 part.

Slowly drop the acid into the spirit, and mix.

ELIXIR AURANTIORUM COMPOSITUM.

Ph. Borussica, 1847.

℞ Orange peel, cut . . . ℥vj.
Cinnamon bark, bruised . ℥ij.
Carbonate of potash . . ℥j.
Madeira wine . . . . ℔iv.

Macerate for six days, then press, and add

Extract of gentian,
„ wormwood,
„ buckbean,
„ cascarilla, āā . . ℥j.

Mix; and after allowing the sediment to subside, filter the liquor.

Note.—Limpid, having a brown colour, and bitter aromatic taste.

ELIXIR GARI. *Elixir de garus. Garus' elixir.*

Soubeiran's Trait. Pharm. 1847.

No. 1.

℞ Socotrine aloes . . . 490 grs.
Myrrh . . . . . 245 „
Saffron . . . . . 490 „
Canella alba . . . . 245 „
Cloves . . . . . 245 „
Nutmegs . . . . . 245 „
Spirit (sp. gr. 923) . . 20 ℔.
Orange-flower water . . ℥xvj.

Macerate for two days, and distil of alcoholic liquor . . 10 ℔.

This is the "*Alcoolat de Garus.*"

To form the "*Elixir de Garus,*" add to the above liquor,

Syrup of capillaire . . 12½ ℔.

and colour it with a sufficient quantity of saffron macerated in ℥viij of orange-flower water.

No. 2.

Thierry's Formula.

℞ Aloes, Myrrh, āā . . . 122 grs.
Saffron. . . . . 122 „
Canella alba . . . . 488 „
Cloves. . . . . 488 „
Nutmegs . . . . . 244 „
Spirit (sp. gr. 864) . . 13 ℔.

Distil off 12 ℔ of "*alcoolat.*" To the residue of the distillation, add

Rose water . . . . . 10 ℔.

Distil off 6 ℔, and add as much of this aromatic water to the *Alcoolat* as will make the sp. gr. 890. Then take of

The above liquor . . . ℔xj.
Simple syrup . . . . ℔xv.
Tincture of vanilla,
Tincture of orange peel, āā f ℥ijss.
Fresh milk . . . . ℔j.
Tincture of saffron, q. s.

Macerate for two days, and then filter it.

ELIXIR PROPRIETATIS PARACELSI. *Elixir de propriété de Paracelse. Paracelsus' elixir of propriety.*

Ph. Borussica, 1847.

℞ Aloes, bruised,
Myrrh, bruised, āā . . . ℥ij.
Saffron . . . . . ℥j.
Rectified spirit (sp. gr. 900) ℔ij.
Diluted sulphuric acid, (Sulph. acid 1 part, water 5 parts, by weight) . . } ℥ij.

Macerate for four days, and filter.

Soubeiran's Trait. Pharm. 1847.

℞ Tincture of myrrh . . . ℥iv.
Tincture of saffron . . . ℥iij.
Tincture of aloes . . . ℥iij.

Mix.

See also *Tinctura aloes composita.*

ELIXIR VITRIOLI MYNSICHTI. *Tinctura aromatica acida.*

Ph. Austr. 1855.

℞. Sweet flag root,
Galanga root, āā . . . ℥j.
Ginger, Cinnamon,
Cloves, Nutmegs, . . ℥iij.
Lemon peel . . . . . ℥ss.
White sugar . . . . ℥iij.
Proof spirit . . . . . ℔ij.
Diluted sulphuric acid . . ℥iij.

Macerate for six days, then press and filter, so as to make ℥xxvij.

EMBROCATIO (from εμβρεχω, I moisten).

An external fluid application for any part of the body.

EMBROCATIO ACONITINÆ. *Embrocation of aconitine.*

Dr. Turnbull.

℞ Aconitina	gr.viij.
Rectified spirit	f ℥ij.

Mix.

EMBROCATIO AMMONIÆ. *Dr. Hawkins's embrocation. Ward's essence for the headache.*

℞ Camphor	℥ij.
Rectified spirit	℥xiv.
Solution of ammonia	℥ij.
Oil of lavender	℥ss.

Mix.

EMBROCATIO DELPHINIÆ. *Embrocation of delphinia.*

Dr. Turnbull.

℞ Delphinia	℈j.
Rectified spirit	f ℥ij.

Mix.

EMBROCATIO VERATRIÆ. *Embrocation of veratria.*

Dr. Turnbull.

℞ Veratria	℈j.
Rectified spirit	f ℥ij.

Mix.

A larger portion of veratria is sometimes used.

EMERY. *Lapis Smyris.*

A massive variety of sapphire, consisting principally of alumina. It is found in Spain, the Greek Islands, &c. The powder, obtained in different degrees of fineness by elutriation, is used for cleaning and polishing hard surfaces.

EMETINA.

The active principle of ipecacuanha. The following process is given for its preparation in the

Ph. Suecica, 1845.

Digest 1 part of powdered ipecacuanha for 24 hours, in 6 parts of distilled water, containing a little sulphuric acid. Strain the liquor, and add 1 part of lime; then evaporate to dryness over the water-bath. Exhaust the dry mass with boiling rectified spirit, and distil the tincture to dryness. Dissolve the dry residue in a little water, acidulated with sulphuric acid; decolorize it with purified animal charcoal; concentrate the filtered liquor, and precipitate the emetine with solution of ammonia. Wash, dry without heat, and carefully preserve the precipitate.

Dose.—$\frac{1}{8}$ to $\frac{1}{4}$ of a grain.

EMPLASTRUM (from εμπλασσω, to spread upon). *A plaster.*

A solid and tenacious compound, usually adhesive at the ordinary heat of the human body, and intended for external application.

EMPLASTRUM ÆRUGINIS. *Verdigris plaster.*

Codex, Ph. Franç. 1839.

℞ Yellow wax	125 parts.
Burgundy pitch	60 ,,
Common turpentine	30 ,,
Powdered verdigris	30 ,,

Melt the first three ingredients, then stir in the verdigris, and strain.

EMPLASTRUM ADHESIVUM. *Prestat's adhesive plaster.*

℞ Lead plaster	400 parts.
Resin	50 ,,
Venice turpentine	38 ,,
Mastich	12 ,,
Gum ammoniacum	12 ,,

Melt the lead plaster, resin, and turpentine together, then add the gums in fine powder, and when thoroughly incorporated, spread the plaster on linen or calico.

EMPLASTRUM AMMONIÆ. *Kirkland's volatile plaster.*

℞ White soap	℥ij.
Lead plaster	℥iv.
Sal ammoniac	℥ss.

Melt the soap and plaster together, and add the sal ammoniac in fine powder.

Emplastrum ammoniaci. *Plaster of ammoniacum.*

Lond. Ph. 1851.

℞ Prepared ammoniacum . . ℥v.
Diluted acetic acid . . . f℥viij.

Dissolve the ammoniacum in the acid; then evaporate the solution by a slow fire, constantly stirring, to a proper consistence.

Edin. Ph. 1841.

℞ Ammoniac . . . . . ℥v.
Distilled vinegar . . . . f℥ix.

Dissolve the ammoniac in the vinegar, and then evaporate to a proper consistence over the vapour-bath, frequently stirring the liquid.

Dubl. Ph. 1850.

℞ Gum ammoniac in coarse powder ℥iv.
Proof spirit . . . . . f℥iv.

Dissolve the gum ammoniac in the spirit, with the aid of heat, and strain; then evaporate the solution by means of a steam or water bath, stirring constantly until it acquires a proper consistence.

Use.—Stimulant and resolvent.

Emplastrum ammoniaci cum hydrargyro. *Plaster of ammoniacum with mercury.*

Lond. Ph. 1851, and Edin. Ph. 1841.

℞ Ammoniacum . . . . ℔j.
Mercury. . . . . ℥iij.
Olive oil. . . . . f℥j.
Sulphur . . . . . gr.viij.

To the heated oil add the sulphur gradually, stirring constantly with a spatula, until they incorporate; then rub the mercury with them, until globules are no longer visible: lastly, add the ammoniacum gradually when melted, and mix them all.

Dubl. Ph. 1850.

℞ Ammoniac plaster . . . ℥iv.
Mercurial plaster . . . ℥viij.

Melt them together by means of a steam or water bath, and stir constantly, until the mixture stiffens on cooling.

Use.—This is a more active plaster than the preceding; it is applied in syphilitic pains in the joints and limbs, in nodes and indurated glands.

Emplastrum antarthriticum helgolandi.

Codex Medic. Hamberg. 1845.

℞ Calcined sulphuret of antimony . . . . . ℥iss.
Yellow wax . . . . . ℥iss.
Black pitch . . . . . ℥vss.
Tar . . . . . ℥iiss.

Melt, and spread it thickly upon leather.

Emplastrum antimoniale. *Antimonial plaster.*

Niemann.

℞ Resin plaster . . . . ℥j.
Resin . . . . . ℥iv.
Venice turpentine . . . ℥iij.

Melt together with a gentle heat, and add, when nearly cold,

Tartarized antimony, in powder ℥j.

This is applied to the nape of the neck, in scarlatina, in children. It has also been successfully employed, mixed with opium, in rheumatic affections of the joints.

See *Emplastrum stibiatum*.

Emplastrum aromaticum. *Aromatic plaster.*

Dubl. Ph. 1826.

℞ Frankincense . . . . ℥iij.
Yellow wax . . . . . ℥ss.
Cinnnamon bark, powdered. ℥vj.
Essential oil of Jamaica pepper,
Essential oil of lemons, āā . ℥ij.

Melt the frankincense and wax together and strain; when they are beginning to thicken by cooling, mix in the powder of cinnamon, rubbed up with the oils, and make a plaster.

Use.—A stimulant application over the region of the stomach, in case of great irritability of that region; also in dyspepsia.

Emplastrum assafœtidæ. *Assafœtida plaster.*

Edin. Ph. 1841.

℞ Litharge plaster,
Assafœtida, āā . . . . ℥ij.
Galbanum,
Bees'-wax, āā . . . . ℥j.

Liquefy the gum resins together and strain them; then add the plaster and wax also in the fluid state, and mix them all thoroughly.

Med. Use.—It is applied, as an antispasmodic, over the stomach or abdomen, in hysteria with flatulence; to the chest or between the shoulders in hooping-cough.

Emplastrum belladonnæ. *Belladonna plaster.*

Lond. Ph. 1851.

℞ Extract of belladonna,
Plaster of soap, of each . . ℥iij.

Add the extract to the plaster, melted by the heat of a water-bath, and mix, constantly stirring, that it may become of a proper consistence.

Edin. Ph. 1841.

℞ Plaster of resin . . . . ℥iij.
Extract of belladonna . . ℥iss.

To the plaster, melted with the heat of a water-bath, add the extract, and mix.

Dubl. Ph. 1850.

℞ Extract of belladonna . . . ℥j.
Resin plaster . . . . . ℥ij.

Melt the plaster by the heat of a steam or water bath, then add the extract, and mix them immediately.

Use.—Anodyne and antispasmodic.

Emplastrum calefaciens. *Warming plaster.*

Dubl. Ph. 1850.

℞ Plaster of Spanish flies . . ℔ss.
Burgundy pitch . . . . ℔vss.

Melt them together by means of a steam or water bath, and withdrawing the heat, stir constantly until the mixture stiffens.

Med. Use.—Used in catarrh, local pains, &c.

Emplastrum cantharidis. *Plaster of cantharides.*

Lond. Ph. 1851.

℞ Cantharides rubbed into a very fine powder . . . ℔j.
Wax,
Suet, of each . . . . ℥viiss.
Resin . . . . . ℥viij
Lard . . . . . ℥vj.

Add the resin, previously melted, to the wax, suet, and lard melted together. Then remove all from the fire, and a little before they thicken, sprinkle in the cantharides, and mix.

Edin. Ph. 1841.

℞ Cantharides, in very fine powder,
Resin,
Bees'-wax,
Suet, āā . . . . . ℥ij.

Liquefy the fats, remove them from the heat, sprinkle in the cantharides, and stir briskly, as the mixture concretes on cooling.

Dubl. Ph. 1850.

℞ Spanish flies, in very fine powder ℥vj.
Yellow wax,
Resin,
Prepared lard, of each . . ℥iv.

To the wax, resin, and lard, previously melted together by a steam or water heat, add the Spanish flies, and stir the mixture constantly until the plaster is cool.

Med. Use.—Employed in all cases where a blister is required, except to children after exanthematous diseases, especially measles.

Emplastrum cantharidis compositum. *Compound Plaster of cantharides.*

Edin. Ph. 1841.

℞ Venice turpentine . . . ℥ivss.
Burgundy pitch,
Cantharides, āā . . . . ℥iij.
Bees'-wax . . . . . ℥j.

Verdigris . . . . . ℥ss.
White mustard seed, black pepper, āā . . . . . ʒij.

Liquefy the wax and Burgundy pitch, add the turpentine, and while the mixture is hot, sprinkle into it the remaining articles previously in fine powder, and mixed together. Stir the whole briskly, as it concretes on cooling.

Med. Use.—A most infallible blistering plaster.

Emplastrum ceræ. *Plaster of wax.*

Lond. Ph. 1836.

℞ Wax,
Suet, āā . . . . . ℔iij.
Resin . . . . . ℔j.

Mix them together, and strain.

Edin. Ph. 1841. *Emplastrum simplex.*

℞ Bees'-wax . . . . . ℥iij.
Suet,
Resin, āā . . . . . ℥ij.

Melt them together with a moderate heat, and stir the mixture briskly till it concretes on cooling.

Emplastrum cerati saponis. *Soap cerate plaster.*

Put ℔iv of soap cerate into a water-bath, and continue the application of the heat until the moisture is entirely evaporated, then add ℥j of mastich and ℥j gum ammoniacum, in fine powder, and stir them together until they are completely incorporated. Afterwards spread the plaster on linen or calico. The mastich and ammoniacum may be omitted.

Emplastrum cerussæ. *Emplastrum album coctum.*

Ph. Borussica, 1847.

℞ Litharge, finely powdered . ℔j.
Ceruss (carbonate of lead) ℔vij.
Olive oil . . . . . ℔ivss.
Water . . . . . q. s.

Mix the litharge and oil, with a small quantity of water, and heat them over the fire, constantly stirring the mixture, adding more warm water from time to time as it evaporates, until the litharge has entirely combined; then put in the ceruss, and continue the process as before, allowing the temperature to rise to 257° Fahr., until it acquires the characters of a plaster.

Emplastrum cumini. *Cumin plaster.*

Lond. Ph. 1851.

℞ Cummin,
Caraway,
Bay, of each . . . . ℥iij.
Prepared Burgundy pitch . ℔iij.
Wax . . . . . ℥iij.
Olive oil,
Water, of each . . . . fʒiss.

Add the dry ingredients rubbed into powder, the oil, and the water, to the pitch and wax melted together; then evaporate to a proper consistence.

Med. Use.—Formerly employed as a discutient and resolvent.

Emplastrum diapalmum. *Emplastre diapalme. Palm plaster.*

Soubeiran's Trait. Pharm. 1847.

℞ Simple plaster 32
White wax 2
Sulphate of zinc 1

Liquefy the plaster and the wax, and add the sulphate of zinc, dissolved in a small quantity of water. Reuss and Plenck introduced oil of palm into the composition of the plaster.

Emplastrum diaphoreticum mynsichti.

Ph. Slesvico-Holsat. 1831.

℞ Yellow wax . . . . . ℥vj.
Colophonium . . . . . ℥iij.
Amber . . . . . ℥j.
Gum ammoniacum . . . ℥j.
Galbanum . . . . . ℥ss.
Turpentine . . . . . ℔ijss.
Sandarach . . . . . ℥ss.
Mastic . . . . . ʒij.
Olibanum . . . . . ʒij.

Mix according to art, so as to form a plaster.

EMPLASTRUM FERRI. *Plaster of iron.*

Lond. Ph. 1851.

℞ Sesquioxide of iron	℥j.
Plaster of lead	℥viij.
Prepared frankincense	℥ij.

Sprinkle the sesquioxide into the plaster and frankincense, melted together by a slow fire, and mix.

Edin. Ph. 1841.

℞ Litharge plaster	℥iij.
Resin	℥vj.
Olive oil	f ℥iijss.
Bees'-wax	℥iij.
Red oxide of iron	℥j.

Triturate the oxide of iron with the oil, and add the mixture to the other articles, previously liquefied by a gentle heat. Mix the whole thoroughly.

Dubl. Ph. 1850.

℞ Peroxide of iron, in fine powder	℥j.
Burgundy pitch	℥ij.
Litharge plaster	℥viij.

Add the peroxide of iron to the Burgundy pitch and litharge plaster, previously melted together, and stir the mixture constantly until it stiffens on cooling.

Med. Use.—Employed spread on leather to give mechanical support in muscular relaxations and weakness of the joints; by some it is believed to be tonic.

EMPLASTRUM FUSCUM. *Emplastrum nigrum. Emplastrum noricum. Emplastrum minii adustum.*

Ph. Borussica, 1847.

℞ Minium, in fine powder	℥viij.
Olive oil	℥xvj.
Yellow wax	℥iv.
Camphor	℥ij.

Mix the minium and oil, and heat them in a suitable dish, constantly stirring the mixture until it acquires a blackish-brown colour, then add the wax melted and mixed with the camphor previously dissolved in a little olive oil. Finally, pour the melted plaster into paper moulds.

It will be of a brown colour, and should smell of camphor.

EMPLASTRUM GALBANI. *Galbanum plaster.*

Lond. Ph. 1851.

℞ Prepared galbanum	℥viij.
Plaster of lead	℔iij.
Turpentine	℥j.
Prepared frankincense	℥iij.

Add first the frankincense, afterwards the plaster melted by a slow fire, to the galbanum and turpentine melted together, and mix all.

EMPLASTRUM GUMMOSUM. *Gum plaster.*

Edin. Ph. 1841.

℞ Litharge plaster	℥iv.
Ammoniac,	
Galbanum,	
Bees'-wax, āā	℥ss.

Melt the gum-resins together, and strain them; melt also together the plaster and wax; add the former to the latter mixture, and mix the whole thoroughly.

Use.—Digestive and suppurative; applied to indolent tumours.

EMPLASTRUM GLUTINANS SANTI ANDREÆ A CRUCE. *Delacroix's agglutinative plaster.*

Codex Ph. Franç. 1839.

℞ Burgundy pitch	250 parts.
Elemi resin	60 ,,
Common turpentine	30 ,,
Oil of bays	30 ,,

Melt together, and strain.

EMPLASTRUM HYDRARGYRI. *Plaster of mercury.*

Lond. Ph. 1851.

℞ Mercury	℥iij.

Plaster of lead	℔j.
Olive oil	fʒj.
Sulphur	gr. viij.

To the heated oil add the sulphur gradually, stirring constantly with a spatula until they incorporate; afterwards rub the mercury with them, until globules are no longer visible; then gradually add the plaster of lead, melted with a slow fire, and mix them all.

Edin. Ph. 1841.

℞ Mercury	ʒiij.
Olive oil	fʒix.
Resin	ʒj.
Litharge plaster	℥vj.

Liquefy together the oil and resin, let them cool, add the mercury, and triturate till its globules disappear; then add to the mixture the plaster previously liquefied, and mix the whole thoroughly.

Dubl. Ph. 1850.

℞ Pure mercury	℥vj.
Resin	ʒij.
Oil of turpentine	f ʒj.
Litharge plaster	℥xij.

Dissolve the resin in the turpentine with the aid of heat, add the mercury, and rub them together until metallic globules cease to be visible, and the mixture assumes a dark-grey colour; then add the litharge plaster previously melted, and stir the mixture constantly until it stiffens on cooling.

Use.—Discutient; alterative.

Emplastrum ichthyocollæ. *Isinglass plaster.*

Court plaster.

No. 1.

℞ Isinglass	ʒj.
Honey	ʒss.
Water	℥xij.

Dissolve with heat, and strain. Spread one half of this solution while yet warm over the surface of two square feet of black silk, stretched on a frame, using a camel's-hair brush for the purpose, and allowing each layer to dry before applying the next. Then add to the other half of the solution,

Proof spirit	℥iv.

and apply this mixture over the other, in the same way as before. Lastly, put a coating of tincture of benzoin on the other side of the silk.

No. 2.

℞ Isinglass	ʒj.
Water	℥viij.

Dissolve with heat.

℞ Benzoin resin	ʒij.
Rectified spirit	℥ij.

Dissolve and strain. Mix the two solutions together, and apply several coats of this mixture, while kept fluid by a gentle heat, with a brush, to black silk stretched on a frame, each successive coat being allowed to dry before applying the next. Then put a layer of the following solution on the other side of the silk:—

℞ Chio turpentine	℥j.
Tincture of benzoin	℥ij.

Mix.

Flesh-coloured silk is sometimes used instead of black silk.

Liston's isinglass plaster.

This is made by spreading several coats of strong solution of isinglass in weak spirit over the surface of oiled silk, or, still better, over animal membrane, previously prepared for the purpose from the peritoneal membrane of the cæcum of the ox.

Emplastrum ladani. *Ladamum plaster.*

Lond. Ph. 1788.

℞ Laudanum	ʒiij.
Frankincense	ʒj.
Powdered cinnamon,	
Expressed oil of mace, āā	℥ss.
Oil of mint	ʒss.

Melt the laudanum and frankincense together, add the oil of mace, then put them into a warm mortar, and mix in the cinnamon and oil of mint.

Emplastrum e meliloto. *Melilot plaster.*

Lond. Ph. 1744.

℞ Melilot leaves	℔v̄j.
Beef suet	℔iij.
White resin	℔viij.
Yellow wax	℔iv.

Heat the herb with the suet until it becomes crisp, then strain and press, and add the resin and wax.

Ph. Austr. 1855.

℞ Yellow wax	℔j.
Olive oil,	
Resin,	
Mutton suet, each	℥iij.
Ammoniacum	ʒx.
Common turpentine	℥iij.
Melilot, in powder,	℥viij.
Wormwood, in powder,	
Camomile flowers, in powder,	
Bay-berries, in powder, each	℥ss.

Melt the first four ingredients together and strain, then add the ammoniacum dissolved in the turpentine, and lastly, mix in the powders.

Emplastrum e minio. *Minium plaster.*

Lond. Ph. 1746.

℞ Olive oil	℔iv.
Powdered minium	℔ijss.

To be made in the same way as *Emplastrum plumbi*, excepting that more water is to be used.

Emplastrum minii. *Emplâtre de Nuremberg ou de minum. Red lead plaster.*

Soubeiran's Trait. Pharm. 1847.

℞ Simple plaster	50 parts.
Yellow wax	24 „
Olive oil	8 „
Red lead	12 „
Camphor	1 part.

Melt the plaster and wax; rub the red lead and the oil together on a porphyry slab, and add these to the former, and when nearly cold, stir in the camphor, previously dissolved in a little spirit.

Emplastrum minii adustum. *Emplastrum noricum. Emplastrum fuscum.*

Ph. Austr. 1855.

℞ Olive oil	℔iss.
Minium, in fine powder	℥ix.
Yellow wax	℥iss.
Camphor, in powder	ʒvj.

Boil the minium and oil together until they have acquired a bluish-brown colour, then add the wax, and lastly, as the mixture cools, stir in the camphor.

Emplastrum e mucilaginibus. *Mucilage plaster.*

Lond. Ph. 1846.

℞ Yellow wax	℥xl.
Oil of mucilages	℥viij.
Ammoniacum, strained	℥vj.
Common turpentine	℥ij.

Melt the ammoniacum and turpentine together; melt the wax and oil in a separate vessel, and add these gradually to the former.

Emplastrum opii. *Plaster of opium.*

Lond. Ph. 1851.

℞ Extract of opium	℥j.
Plaster of lead	℥viij.
Prepared frankincense	℥ij.
Boiling water	f℥j.

Add the plaster, melted by a slow fire, and the extract, previously mixed with the water, to the melted frankincense; and evaporate by a slow fire, constantly stirring, that it may become a proper consistence.

Edin. Ph. 1841.

℞ Powder of opium	℥ss.
Burgundy pitch	℥iij.
Litharge plaster	℥xij.

Liquefy the plaster and pitch, add the opium by degrees, and mix them thoroughly.

Dubl. Ph. 1850.

℞ Opium, in very fine powder . ℥j.
Resin plaster . . . . . ℥ix.

Melt the plaster by means of a steam or water bath, then add the opium by degrees, and mix thoroughly.

Use.—As an anodyne application in rheumatism and other local pains.

Emplastrum oxycroceum. *Oxycroceum plaster.*

Edin. Ph. 1744.

℞ Yellow wax . . . . . ℔j.
Black pitch . . . . . ℔ss.
Galbanum . . . . . ℔ss.
Venice turpentine,
Myrrh,
Olibanum, āā . . . . ℥iij.
Saffron . . . . . ℥ij.

Melt, and mix together.

Ph. Borussica, 1847.

℞ Yellow wax,
Colophony, āā . . . . ℔ss.
Strained ammoniacum,
„ galbanum, āā . . ℥ij.
Common turpentine . . ℔ss.
Powdered saffron,
„ mastic,
„ myrrh,
„ Olibanum, āā . ℥ij.

Melt the wax and colophony together, and when partly cooled, add the ammoniacum and galbanum previously dissolved in the turpentine by the heat of a water-bath, then mix in the other ingredients, and form the whole into a plaster.

Emplastrum paracelsi. *Paracelsus' plaster. Emplastrum stypticum.*

℞ Lead plaster . . . . ℥xxviij.
Galbanum plaster . . . ℥ij.
Powdered canella alba,
Frankincense, āā . . . ℥jss.

Melt, and mix together.

Emplastrum picis. *Pitch plaster.*

Lond. Ph. 1851.

℞ Prepared Burgundy pitch . ℔ij.
Prepared frankincense . . ℔j.
Resin,
Wax, of each . . . . ℥iv.
Expressed oil of nutmeg . ℥j.
Olive oil,
Water, of each . . . . f℥ij.

To the pitch, resin, and wax, melted together, add the oils and the water. Then evaporate all, constantly stirring, to a proper consistence.

Edin. Ph. 1841.

℞ Burgundy pitch . . . ℔iss.
Resin,
Bees'-wax, āā . . . . ℥ij.
Oil of mace. . . . . ℥ss.
Olive oil . . . . . f℥j.
Water . . . . . f℥j.

Liquefy the pitch, resin, and wax, with a gentle heat; add the other articles; mix them well together, and boil till the mixture acquires the proper consistence.

Use.—Stimulant, and occasionally rubefacient.

Emplastrum plumbi. *Lead plaster.*

Lond. Ph. 1851.

℞ Oxide of lead, rubbed to very fine powder . . ℔vj.
Olive oil . . . . . cong. j.
Water . . . . . Oij.

Boil them together with a slow fire, constantly stirring, until the oil and oxide of lead unite into the consistence of a plaster; but it will be proper to add a little boiling water, if nearly the whole of that which was used in the beginning should be evaporated before the end of the boiling.

Edin. Ph. 1841. *Emplastrum lithargyri.*

℞ Litharge, in fine powder . ℥v.
Olive oil . . . . . f℥xij.
Water . . . . . f℥iij.

Mix them; boil and stir constantly till the oil and litharge unite, replacing the water, if it evaporate too far.

Dubl. Ph. 1850. *Emplastrum lythargyri.*

℞ Litharge, reduced to a very fine powder . . . ℔v.
Olive oil . . . . . cong. j.
Boiling water . . . . Oij.

Boil all the ingredients together over a gentle fire, stirring constantly, until the oil and litharge acquire such consistence that they will solidify on cooling. Towards the close of the process a little boiling water should be added to supply the place of that which has disappeared.

Use.—This forms the basis of several other plasters; also applied to excoriations, for keeping together the edges of recent cuts.

Emplastrum potassii iodidi. *Plaster of iodide of potassium.*

Lond. Ph. 1851.

℞ Iodide of potassium . . . ℥j.
Prepared frankincense . . ℥vj.
Wax . . . . . ℥vj.
Olive oil . . . . . f℥ij.

To the frankincense and wax, melted together, add the iodide, previously rubbed with the oil, and constantly stir until they shall have cooled. This plaster is to be spread on linen rather than on leather.

Emplastrum resinæ. *Resin plaster.*

Lond. Ph. 1851.

℞ Resin . . . . . ℔ss.
Plaster of lead . . . . ℔iij.

To the plaster of lead, melted with a slow fire, add the resin, previously melted, and mix.

Edin. Ph. 1841.

℞ Litharge plaster . . . . ℥v.
Resin . . . . . ℥j.

Melt them together, with a moderate heat, and stir the mixture well till it concretes on cooling.

Dubl. Ph. 1850.

Emplastrum resinæ. Emplastrum saponis compositum vel adhærens.

℞ Resin, in powder . . . . ℥iv.
Castile soap, in powder . . ℥ij.
Litharge plaster . . . . ℔ij.

To the litharge plaster, previously melted over a gentle fire, add the resin and soap, and mix them intimately.

Use.—For keeping on other dressing, and retaining the edges of recent wounds together.

Emplastrum saponis. *Soap plaster.*

Lond. Ph. 1851.

℞ Soap, sliced . . . . . ℔ss.
Lead plaster . . . . . ℔iij.
Resin . . . . . ℥j.

To the plaster melted by a gentle heat, add the soap and resin previously melted; then, all being well mixed, reduce the product to a proper consistence.

Edin. Ph. 1841.

℞ Litharge plaster . . . . ℥iv.
Gum plaster . . . . . ℥ij.
Castile soap in shavings . . ℥j.

Melt the plasters together with a moderate heat; add the soap, and boil for a little.

Dubl. Ph. 1850.

℞ Castile soap, in powder . . ℥iv.
Litharge plaster . . . . ℔iiss.

To the plaster, previously melted over a gentle fire, add the soap, and heat them together until they are thoroughly incorporated.

Use.—Discutient.

Emplastrum thuris. *Frankincense plaster.*

Dubl. Ph. 1826.

℞ Litharge plaster . . . . ℔ij.
Frankincense . . . . . ℔ss.
Red oxide of iron . . . . ℥iij.

Having melted the plaster and frankincense together, sprinkle in the oxide, stirring them together to form a plaster.

Lond. Ph. 1788.

℞ Frankincense . . . . . ℔ss.
Lead plaster . . . . . ℔ij.
Dragon's blood, powdered . ℥iij.

Melt the lead plaster, and add the frankincense and dragon's blood in powder.

Remark.—A better-looking plaster is produced by melting the frankincense and dragon's blood together, and straining them through a cloth, then mixing these with the lead plaster previously melted.

Use.—In muscular relaxations and weakness of the joints.

SYNONYMES.

Emplastrum Roborans. — Lond. Ph. 1746. *Strengthening plaster.*

Emplastrum zincico-plumbicum. *Emplastrum diapompholigos.*

Ph. Suecica, 1845.

℞	Olive oil	℥vj.
	Yellow wax	℔j.
	Olibanum	℥jss.
	Oxide of zinc	℥iij.
	White lead	℥iv.
	Black lead (graphite)	℥vj.

Mix.

Emplastrum diapompholygos.

Ph. Batava, 1805.

℞	Yellow wax	℥xij.
	Olive oil	℥vij.

To these, melted by a gentle fire, add,

Burnt lead (oxide of lead)	℥vj.
Carbonate of lead	℥iv.
Impure oxide of zinc	℥iij.
Olibanum	℥jss.

Boil, with constant stirring, to the consistence of a plaster.

Emulsio camphoræ. *Camphor emulsion.*

Ph. Castr. Ruthena, 1840.

℞	Camphor	ʒss.
	Milk	℥ss.
	Water	℥vijss.

Rub the camphor with the milk, and then add the water.

Ph. Norvegica, 1854.

℞	Camphor, in powder	1 part.
	Sugar	80 parts.
	Almond emulsion	420 „

Mix the camphor and sugar in a Wedgwood mortar, and add the almond emulsion, triturating them briskly together.

Emulsio phosphorata. *Phosphorus emulsion.*

Ph. Castr. Ruthena, 1840.

℞	Phosphorus	gr. jss.
	Olive oil	℥j.
	Mucilage of gum arabic	℥iij.
	Aromatic water	℥iv.
	Simple syrup	℥j.

Dissolve the phosphorus in the olive oil, then add the other ingredients, and make an emulsion.

Enamels,

Are varieties of glass, generally opaque and coloured, which are applied by fusing them at the flame of a blow-pipe, or by the heat of a small furnace, over the surfaces of metals, such as copper or gold.

The basis of all enamels is a fusible glass called the flux, which is variously coloured by the addition of metallic oxides.

Fluxes for enamels.

No. 1.

℞	Powdered flints	℥iv.
	Flint glass	℥xij.
	Red lead	℥xvi.
	Calcined borax	℥iij.

Melt in a Hessian crucible; keep it melted for several hours in a steady heat, then pour it into water, and grind it in a hard biscuit-ware mortar.

No. 2.

℞	Flint glass	℥x.
	White arsenic, Nitre, āā	℥j.

Treat as No. 1.

No. 3.

℞	Flint glass	℥iij.
	Red lead	℥j.

Treat as No. 1.

No. 4.

℞	Flint glass	℥xvj.
	Red lead	℥xix.

Borax not calcined . . . ℥xj.
Treat as No. 1.

No. 5.

℞ Flint glass . . . . . ℥vj.
Red lead . . . . . ℥viij.
Flux, No. 2. . . . . ℥iv.
Treat as No. 1.

Black enamels.

No. 1.

℞ Pure clay . . . . . ℥iij.
Iron scales . . . . . ℥j.
Mix, and fuse.

No. 2.

℞ Iron scales . . . . . ℥xij.
Oxide of cobalt . . . . ℥j.
Flux, No. 1. . . . . ℥xiij.
Mix.

No. 3.

℞ Peroxide of manganese . . ℥iij.
Zaffre . . . . . ℥j.
Flux, No. 1. . . . . ℥iv.
Mix.

Blue enamels.

No. 1.

Either of the fluxes mixed with oxide of cobalt.

No. 2.

℞ Sand,
Red lead
Nitre, āā . . . . . ℥x.
Flint glass . . . . . ℥xx.
Oxide of cobalt . . . . ℥j.
Mix.

Brown enamels.

No. 1.

℞ Manganese . . . . ℥x.
Red lead . . . . . ℥xxxij.
Powdered flints . . . ℥xvj.
Mix.

No. 2.

℞ Red lead,
Iron scales, āā . . . . ℥j.
Antimony,
Litharge,
Sand, āā . . . . . ℥ij.
Flux, No. 1. . . . . q. s.
Mix.

Green enamels.

No. 1.

℞ Flux . . . . . ℔ij
Black oxide of copper . . ℥j.
Peroxide of iron . . . . ʒss.
Mix.

No. 2.

℞ Flux . . . . . ℥v.
Black oxide of copper . . ʒij.
Oxide of chromium . . . gr. ij.
Mix.

Olive enamel.

℞ Blue enamel . . . . . ℥ij.
Black enamel,
Yellow enamel, āā . . . ℥j.
Mix.

Orange enamel.

℞ Red lead . . . . . ℥xij.
Red sulphate of iron . . . ℥j.
Oxide of antimony . . . ℥j.
Powdered flints . . . . ℥iij.
Flux . . . . . ℥j.
Mix.

Purple enamel.

Flux coloured with the purple of cassius, or peroxide of manganese.

Red enamel, dark.

℞ Sulphate of iron, calcined . ℥vij.
Flux, No. 1 . . . . ℥xviij.
Colcothar . . . . . ℥j.
Mix.

Red enamel, light.

℞ Red sulphate of iron . . . ℥ij.
Flux, No. 1 . . . . . ℥vj.
White lead . . . . . ℥iij.
Mix.

White enamels.

No. 1.

℞ Tin. . . . . 2 parts.
Lead . . . . . 1 part.
Calcine them together, separating the oxide that collects on the surface.
Of this oxide . . . . . ℥j.
Fine crystal . . . . . ℥ij.
Manganese, a very small quantity.

Mix and fuse these, and pour the fused mass into water; repeat the process three or four times.

No. 2.

℞ Washed diaphoretic antimony ℥j.
Glass, free from lead . . . ℥iij.
Mix, and treat as the last.

Yellow enamel.

℞ Red lead . . . . . ℥viij.
Oxide of antimony. . . ℥j.
Oxide of tin . . . . ℥j.
Mix and calcine together, then take of the
Calcined powder . . . ℥ij.
Flux, No. 4 . . . . ℥iij.
Mix.

Encaustic.

Encaustic painting was practised by the ancients; it consists in using wax, to give a gloss to the colours, and to preserve them from injury. The art was restored in 1753, by Count Caylus. The wood or cloth to be painted on, is first prepared by rubbing it over with wax, and then holding it over or before a fire, so that the wax may melt, diffuse itself, penetrate the texture, and fill up all the interstices, so as to form a perfectly smooth surface.

The following instructions were communicated to the Society of Arts, in 1787, by Miss Greenland, who acquired the knowledge in Florence:—

"Melt ℥j of white wax in a glazed earthen vessel, over a slow fire, add, in small quantities at a time, ℥j of powdered mastick, stirring them continually, until the mastick is completely dissolved, and the whole incorporated. Then pour them into cold water, and when hardened, reduce them to powder in a Wedgwood's mortar, previously separating any adhering water by means of blotting-paper.

"In painting, this powder is to be mixed with the colours with a strong solution of gum-arabic. Light colours require but a small quantity of the powder, but more of it must be put in proportion to the body and darkness of the colours; and to black there should be almost as much of the powder as of colour.

"Having mixed the colours, and no more of them than can be used before they get dry, proceed to paint with plain water, in the same way as in painting in water-colours. The painting should be highly finished, otherwise, when varnished, the tints will not appear united.

"When the painting is quite dry, it is to be brushed over with a hard brush dipped in melted white wax, and afterwards held to the fire, so that the surface of the wax may be rendered quite smooth."

The following varnish is sometimes used for encaustic painting:—

℞ White wax . . . . . 1 part.
Oil of turpentine . . . 2 parts.
Mix with heat.

Oil of wax is sometimes substituted for oil of turpentine.

Enema aloës. *Enema of aloes.*

Lond. Ph. 1851.

℞ Aloes . . . . . ℈ij.
Carbonate of potash . . gr. xv.
Decoction of barley . . Oss.
Mix, and rub them together.

Use.—In cases of ascarides in the rectum and in constipation.

Enema assafœtidæ. *Enema of assafœtida.*

Lond. Ph. 1851.

℞ Prepared assafœtida . . . ℥j.
Decoction of barley . . . Oss.
Rub the assafœtida with the decoction gradually added, until they may be well mixed.

Dubl. Ph. 1850.

Enema fœtidum.

℞ Tincture of assafœtida . . f℥ij.
Warm water . . . . ℥xij.
Mix.

Edin. Ph. 1841.

Enema fætidum.

Add to the cathartic enema two drachms of tincture of assafœtida.

Use.—Antispasmodic and carminative.

ENEMA CATHARTICUM. *Cathartic enema.*

Edin. Ph. 1841.

℞ Olive oil . . . . . ℥j.
Sulphate of magnesia . . ℥ss.
Sugar . . . . . ℥j.
Senna . . . . . ℥ss.
Boiling water . . . . f ℥xvj.

Infuse the senna for an hour in the water; then dissolve the salt and sugar; add the oil, and mix them by agitation.

Dubl. Ph. 1850.

℞ Sulphate of magnesia . . ℥j.
Olive oil . . . . . f ℥j.
Mucilage of barley . . f ℥xvj.

Dissolve the sulphate of magnesia in the mucilage, add the oil, and mix.

Med. Use.—A useful cathartic enema for general purposes.

ENEMA COLOCYNTHIDIS. *Enema of colocynth.*

Lond. Ph. 1851.

℞ Extract of colocynth . . . ℥ss.
Soft soap . . . . . ℥j.
Water . . . . . Oj.

Mix, and rub together.

Med. Use.—An efficient enema in obstinate constipation and colic.

ENEMA OPII. *Enema of opium.*

Lond. Ph. 1851.

℞ Decoction of starch . . f ℥iv.
Tincture of opium . . ♏xxx.

Mix.

Edin. Ph. 1841.

℞ Starch . . . . ℥ss.
Tincture of opium . f ℥ss. to f ℥i.
Water . . . . f ℥ij.

Boil the starch in the water, and when it is cool enough for use, add the tincture of opium.

Use.—This enema is anodyne, and used in irritable states of the bladder and uterus; also in dysentery.

ENEMA TABACI. *Enema of tobacco.*

Lond. Ph. 1851.

℞ Tobacco . . . . . ℈j.
Boiling water. . . . . Oss.

Macerate for an hour, and strain.

Edin. Ph. 1841.

℞ Tobacco . . . . . 15 gr. to ℥ss.
Boiling water . . f ℥viij.

Infuse for half an hour, and then strain.

Use.—Has been sometimes given in cases of hernia. It is a dangerous application.

Dubl. Ph. 1850.

℞ Tobacco leaf . . . . ℈j.
Boiling water . . . . ℥viij.

Infuse for one hour in a covered vessel, and strain.

ENEMA TEREBINTHINÆ. *Turpentine enema.*

Lond. Ph. 1851.

℞ Oil of turpentine . . . f ℥j.
The yolk of one egg,
Decoction of barley . . f ℥xix.

Rub the oil with the yolk, and mix in the decoction.

Edin. Ph. 1841.

℞ Oil of turpentine . . . f ℥j.
Yolk of egg . . . . q. s.
Water . . . . . f ℥xix.

Rub the oil and yolk carefully together, and then add the water gradually.

Dubl. Ph. 1850.

℞ Oil of turpentine . . . f ℥j.
Mucilage of barley . . f ℥xvj.

Mix.

Use.—In cases of ascarides, in peritoneal inflammation, and as an active assistant to cathartics in general.

ERGOTINA. ERGOTINE.

This name is applied to two very different preparations, the one being an

ethereal and the other an aqueous extract of ergot of rye.

The former consists principally of a thick oil, of a reddish-brown colour, which is soluble in alcohol and ether. This was supposed by Dr. Wright to be the active principle of the ergot. It is prepared by exhausting powdered ergot of rye with ether by displacement, and afterwards distilling off the ether, when the oil, which is not volatile, will be left. Good ergot yields about 30 per cent. of this oily product.

M. Bonjean, who has carefully studied the properties of ergot of rye, is of opinion that its poisonous properties are due to the oil, while its hæmostatic properties are entirely due to extractive matter soluble in water. He calls this "*Aqueous extract of ergot*," "*Hæmostatic extract*," or "*Ergotine*." He directs it to be made as follows:—

Exhaust powdered ergot of rye with cold water by displacement, and heat the liquor in a water-bath; if coagulation takes place, separate the coagulum with a filter; then evaporate the clear liquor to the consistence of syrup, and when cold, add to it a large excess of rectified spirit, so as to precipitate all gummy matter; separate the precipitate, and evaporate the liquor to the consistence of an extract.

500 parts of ergot will yield 70 or 80 parts of this extract.

Essence of rennett.

℞ A fresh rennett

Salt	ʒj.
Tartaric acid	℈j.
Water	ʒxvj.

Infuse for 24 hours and strain. Then again add to the rennett,

Water	ʒviij.
Salt	ʒss.
Tartaric acid	gr. x.

Infuse for 24 hours and strain. Mix the solutions and add

Brandy	ʒij.

Mix.

It is sometimes flavoured with a few drops of essential oils of bitter almonds nutmegs, and cloves.

Use.—It is employed for curdling milk, a tablespoonful being added to a quart of milk previously made lukewarm, and the mixture allowed to stand for half an hour, when it will become coagulated.

Essences for flavouring spirits, &c.

Fruit essence.

There are several preparations sold under the above names, for producing, by artificial means, the peculiar flavours which are possessed by some fruits. These essences consist of compound ethers dissolved in spirit. The following processes are given for making some of them; but by varying the processes, or by mixing the products, the flavours of other fruit may be imitated.

Essence of Apple.

This is a solution of valerianate of oxide of amyl.

One part, by weight, of pure fusel oil (amylic alcohol) is carefully mixed with an equal weight of oil of vitriol, and when the mixture has cooled, one and a quarter part of valerianic acid is added. The mixture is warmed for some minutes (not too long nor too much) by means of a water-bath, and water is afterwards added, which causes the valerianate of oxide of amyl to separate. It is washed with solution of carbonate of soda, to separate any free acid from it, and then one part of this ether is dissolved in six or eight parts of rectified spirit to form the essence of apple.

Essence of Jargonelle Pear.

This is a solution of acetate of oxide of amyl.

Two parts of fusel oil (amylic alcohol) are mixed with an equal weight of glacial acetic acid, and one part of oil of vitriol.

The mixture is digested for some hours at a temperature of 250° Fahr., and water is then added to it, when the ether (acetate

of oxide of amyl) separates. This is distilled off, and purified by washing it with solution of carbonate of soda. The addition of a little acetic ether (acetate of oxide of ethyl) is said to improve the flavour of the essence, which is made by mixing 30 parts of acetate of oxide of amyl, 1 part of acetate of oxide of ethyl, and 200 parts of rectified spirit.

Essence of Pine-apple.

This is solution of butyric ether.

Three parts of butyric acid are mixed with six parts of rectified spirit, and two parts of oil of vitriol. The mixture is digested for some hours at a gentle heat, and the ether distilled off. One part of this ether is dissolved in 6 or 8 parts of rectified spirit.

Essence of Quince.

This is solution of pelargonate or œnanthate of oxide of ethyl.

Oil of rue is treated with twice its weight of weak nitric acid, the mixture being heated to near its boiling point. After some time two layers are observed in the liquid, the lower of which consists of the products of the oxidation of the oil of rue, together with the excess of nitric acid. This lower layer is separated from that which floats over it, and purified from most of the nitric acid by evaporation with a chloride of zinc bath. It is then filtered, mixed with twice its weight of rectified spirit, and half its weight of oil of vitriol. The mixture is digested for some hours at a gentle heat, and the ether is then distilled off. The essence is made by dissolving one part of the ether in six parts of rectified spirits.

Essentia abietis. *Essence of spruce.*

The young twigs of the Scotch, or some other kind of fir, are boiled in water, and the decoction evaporated to the consistence of treacle. It is tonic and stimulant. Used for making spruce beer.

Essentia ambrægriseæ. *Essence of ambergris.*

℞ Ambergris	ʒiiss.
Rectified spirit	Oj.

Macerate for 14 days, and strain.

Essentia ambrægriseæ et moschi. *Essentia regia. Essence royale. Essence of ambergris and musk.*

No. 1.

℞ Ambergris	ʒiijss.
Musk	ʒij.
Oil of cinnamon	♏xlviij.
Oil of rhodium	♏xxxij.
Essence of roses	fʒiv.
Rectified spirit	fʒxxiv.
Orange-flower water	fʒiv.
Sand	℥ij.

Rub the ambergris and musk with the sand, then add the spirit and other ingredients; macerate for 14 days, and then strain.

No. 2.

℞ Ambergris	ʒij.
Musk	ʒj.
Oil of cinnamon	gtt. xxxvj.
Oil of rhodium	gtt. xxiv.
Subcarbonate of potash	ʒiij.
Essence of roses	fʒix.
Rectified spirit	fʒxviij.

Macerate for eight days and strain.

Essentia amygdalæ amaræ. *Essence of bitter almonds.*

℞ Oil of bitter almonds	fʒij.
Spirit of wine	fʒvj.

Mix.

Use.—For flavouring custards, pastry, &c., but great caution should be observed in using it for these or similar purposes.

Essentia anisi. *Essence of aniseed.*

Dubl. Ph. 1850.

℞ Oil of anise	fʒj.
Rectified spirit	fʒix.

Mix with agitation.

Note.—This essence is used for making the *aqua anisi* of the Dublin Pharmacopœia.

ESSENTIA CAMPHORÆ. *Essence of camphor. Concentrated camphor julep.*

℞ Camphor . . . . . ʒj.
Rectified spirit . . . . ʒijss.
Water . . . . . ʒss.

Dissolve the camphor in the spirit and add the water.

This is intended for the extemporaneous preparation of camphor julep, by adding a few drops of the essence to a glass of water, and stirring them briskly. A little tincture of myrrh is sometimes added, in making the essence, as this is found to promote the solution of the camphor in the water.

ESSENTIA CAPSICI. *Essence of cayenne pepper.*

℞ Cayenne pepper . . . . ʒiv.
Rectified spirit . . . . . Oj.

Digest with a gentle heat for 7 days, then press and strain the essence. It may be better made by displacement.

ESSENTIA CARUI. *Essence of caraway.*

Dubl. Ph. 1850.

℞ Oil of caraway . . . . fʒj.
Rectified spirit . . . . fʒix.
Mix with agitation.

Note.—This essence is used for making the *aqua carui* of the Dublin Pharmacopœia.

ESSENTIA CINNAMOMI. *Essence of cinnamon.*

Dubl. Ph. 1850.

℞ Oil of cinnamon . . . . fʒj.
Rectified spirit. . . . . fʒix.
Mix with agitation.

Note.—This essence is used for making the *aqua cinnamomi* of the Dublin Pharmacopœia.

ESSENTIA CLUPEÆ. *Essence of anchovies.*

Pound ℔j of anchovies in a Wedgwood's mortar, put them into a pipkin with ʒiv of the best vinegar, and boil them for a few minutes, then pulp them through a hair-sieve. To the portion that passes through the sieve, add ʒij of salt, the same quantity of flour, and sufficient water to give it the proper consistence; boil them together for a few minutes, and colour the mixture with arnotto. A little cayenne pepper is sometimes added.

ESSENTIA FŒNICULI. *Essence of fennel.*

Dubl. Ph. 1850.

℞ Oil of fennel . . . . . fʒj.
Alcohol . . . . . fʒix.
Mix with agitation.

Note.—This essence is used for making the *aqua fœniculi* of the Dublin Pharmacopœia.

ESSENTIA MENTHÆ PIPERITÆ. *Essence of peppermint.*

Dubl. Ph. 1850.

℞ Oil of peppermint. . . . fʒj.
Stronger spirit. . . . . fʒix.
Mix with agitation.

Note.—This essence is used for making the *aqua menthæ piperitæ* of the Dublin Pharmacopœia. The essence popularly used as *essence of peppermint* is made stronger than the foregoing. The following are the formulæ usually adopted:—

No. 1.

℞ Oil of peppermint . . . . ʒj.
Rectified spirit . . . . . ʒiij.
Mix.

No. 2.

℞ Oil of peppermint . . . . ʒj.
Rectified spirit . . . . . ʒv.
Mix.

This essence is sometimes coloured green with the fresh leaves of spinach, or of the peppermint plant.

Med. Use.—Stimulant and carminative.

Dose.—Gtt. xx. to gtt. xxx., on sugar.

ESSENTIA MENTHÆ PULEGII. *Essence of pennyroyal.*

Dubl. Ph. 1850.

℞ Oil of pennyroyal . . . . fʒj.
Rectified spirit. . . . . fʒix.
Mix with agitation.

Note.—This essence is used for making the *aqua menthæ pulegii* of the Dublin Pharmacopœia. The essence popularly used as *essence of pennyroyal* is usually prepared according to one of the following formulæ:—

No. 1.

℞ Oil of pennyroyal . . . . ʒj.
Rectified spirit . . . . . ʒiij.
Mix.

No. 2.

℞ Oil of pennyroyal . . . . ʒj.
Rectified spirit . . . . . ʒv.
Mix.

Sometimes coloured with the fresh leaves of spinach or of the pennyroyal plant.

Med. Use.—Stimulant and carminative.

Dose.—Gtt. xx. to gtt. xxx., on sugar.

ESSENTIA MENTHÆ VIRIDIS. *Essence of mint.*

Dubl. Ph. 1850.

℞ Oil of spearmint . . . . fʒj.
Stronger spirit . . . . fʒix.
Mix with agitation.

Note.—This essence is used for making the *aqua menthæ viridis* of the Dublin Pharmacopœia.

ESSENTIA MYRISTICÆ MOSCHATÆ. *Essence of nutmeg.*

Dubl. Ph. 1850.

℞ Oil of nutmeg. . . . . fʒj.
Stronger spirit . . . . fʒix.
Mix with agitation.

ESSENTIA ODONTALGICA. *Essence for tooth-ache.*

No. 1.

℞ Pellitory of Spain root . . ℔ss.
Extract of belladonna. . . ʒij.
Rectified spirit . . . . Oj.

Macerate for 14 days and strain; then add,

Hyponitrous ether . . . ʒj.
Oil of wine . . . . . ℥ss.
Oil of cloves . . . . . ʒij.
Mix.

No. 2.

℞ Acetate of morphia . . gr. xxiv.
Strongest acetic acid . . ʒiv.
Oil of cloves . . . . ʒvj.
Tincture of pellitory of Spain . . . . ℥j ʒvj.
Mix.

ESSENTIA ODORATA. *Essence for the handkerchief.*

℞ English oil of lavender. gtt. xlviij.
Oil of cloves . . . gtt. xxxii.
Oil of orange peel . . gtt. xvj.
Oil of bergamot. . . gtt. viij.
Sweet spirit of nitre . gtt. viij.
Oil of yellow sandal wood,
Oil of neroli,
Otto of roses, āā . . gtt. ij.
Oil of cinnamon . . gtt. j.
Rectified spirit . . . ℥j.
Dissolve, and add,
Honey water . . . ℥viij.
Essence of ambergris and musk. . . . ℥j.
Mix.

ESSENTIA PIMENTÆ. *Essence of pimenta.*

Dubl. Ph. 1850.

℞ Oil of pimenta . . . . fʒj.
Rectified spirit . . . . fʒix.
Mix with agitation.

Note.—This essence is used for making the *aqua pimentæ* of the Dublin Pharmacopœia.

ESSENTIA ROSÆ. *Essence of roses.*

No. 1.

℞ Otto of rose . . . . . ʒv.
Rectified spirit. . . . . Ov.
Mix.

No. 2.

℞ Rectified spirit . . . . Oij.
Subcarbonate of potash . . ʒiv.

Shake them together in a bottle, and allow them to stand for several days, shaking the bottle from time to time, then pour off the strong spirit, which will be found floating over a dense solution of carbonate of potash. To this spirit add,

Otto of rose	ʒij.
Oil of bergamot	ʒj.
Oil of neroli	gtt. x.

Mix.

ESSENCE ROSMARINI. *Essence of rosemary.*

Dubl. Ph. 1850.

℞ Oil of rosemary	fʒj.
Rectified spirit	fʒix.

Mix with agitation.

ESSENTIA SAPONIS. *Essence de savon. Essence of soap.*

Soubeiran's Trait. Pharm. 1847.

℞ White soap	24 parts.
Distilled water	32 ,,
Alcohol sp. gr. 923	64 ,,
Carbonate of potash	1 part.
Essence of lemons, or any other	q. s.

The soap is dissolved without the aid of heat; the alkaline carbonate and essence are added, and the whole is filtered. This essence is employed for the toilette.

ESSENTIA SEMENÆ APII. *Essence of celery seeds.*

℞ Celery seeds	ʒiv.
Proof spirit	Oj.

Macerate for 14 days, and strain.

This is used for culinary purposes. Several other essences are made in the same way, or by dissolving volatile oils in spirit.

ESSENTIA VOLATILES. *Volatile essence for smelling bottles.*

No. 1.

℞ English oil of lavender,	
Essence of musk, āā	ʒiv.
Oil of bergamot	ʒij.
Oil of cloves	ʒj.
Otto of roses	gtt. x.
Oil of cinnamon	gtt. v.
Strongest liq. ammon.	Oj.

Mix.

No. 2.

℞ Essence of lemon,	
Oil of bergamot, āā	ʒvj.
Oil of lavender	ʒj.
Oil of neroli,	
Oil of cassia, āā	ʒss.
Otto of roses	ʒiss.
Oil of cloves,	
Oil of orange peel, āā	gtt. xv.
Oil of sandal wood	gtt. x.
Strongest liq. ammon	Oj.

Mix.

No. 3.

℞ Oil of bergamot	ʒiij.
Essence of lemons	ʒij.
Oil of lavender	ʒvj.
Essence of jasmine	ʒiv.
Oil of neroli	ʒij.
Otto of roses	ʒiss.
Oil of origanum	ʒj.
Essence of ambergris	ʒj.
Oil of sassafras	ʒiij.
Musk	gr. xx.

Mix, and macerate for a week, then add ʒiss of the clear oil to Oj of the strongest solution of ammonia.

No. 4.

℞ Oil of bergamot,	
Essence of ambergris and musk, āā	ʒij.
Oil of lavender	gtt. xxxvj.
Oil of cinnamon	gtt. x.
Otto of roses	gtt. xxiv.
Essence of jasmine	gtt. xx.
Essence of violets	gtt. x.
Strongest liq. ammon.	Oj.

Mix.

ESSENTIA ZINGIBERIS. *Essence of ginger.*

No. 1.

℞ Unbleached Jamaica ginger	℥iv.
Rectified spirit	Oj.

Macerate for a fortnight, and strain.

No. 2.

℞ Ginger in fine powder	℔ss.
Animal charcoal	℥iv.
Rectified spirit	℔j.

Mix the ginger and animal charcoal together, introduce them into a displacement apparatus, and allow the spirit to percolate through in the usual manner; displacing the essence by as much more spirit as is necessary.

No. 3.

℞ Ginger, in fine powder . . ℔ss.
Rectified spirit . . . . ℔j.

Operate as in the previous case.

No. 4.

℞ Jamaica ginger . . . . ℔j.
Rectified spirit . . . . ℔iij.

Macerate for 14 days, press, and strain the tincture. Then introduce it into a retort, and carefully distil off the spirit, with the heat of a water-bath, until one pint remains in the retort. The spirit distilled off may be used in the next operation. The essence remaining in the retort will be very strong, but will have lost some of the fine flavour of the ginger.

Extractum absinthii. *Extract of wormwood.*

Ph. Borussica, 1847.

℞ Tops of the herb of wormwood, ℔iv.

Cut them into small pieces, put them into a suitable vessel, and pour over them boiling water sufficient to form a pulp.

Macerate for 24 hours, occasionally stirring, then press out the liquor. To the residue add more boiling water, macerate for 12 hours, and again press. Evaporate the strained liquors with a gentle heat, avoiding ebullition, and constantly stirring, until reduced to 12 pounds. Let it now stand for some time, that the sediment may subside, then, having decanted the clear liquor, evaporate it to the proper consistence in a water-bath, the heat of which shall not exceed 150° or 165° Fahr.

Ph. Austr. 1855.

℞ Herb of wormwood, dry and cut ℔ij.
Rectified spirit . . . . . ℔vj.
Water . . . . . ℔vj.

Macerate the herb with 4 pounds of the spirit for 12 hours, then add 4 pounds of water, and digest in a water-bath for 24 hours. Strain off the liquor, press the herb strongly, and add to the pressed herb 2 pounds of spirit and 2 pounds of water. Digest again for 24 hours, strain and press. Distil off the spirit from the mixed liquor, and evaporate what remains by the heat of a water-bath to the consistence of an extract.

Med. Use.—Stomachic and tonic.

Dose.—Grs. x. to ℈j.

Extractum aconiti. *Extract of aconite.*

Lond. Ph. 1851.

℞ The French leaf of aconite. . ℔j.

Bruise in a stone mortar; then press out the juice, and evaporate it unstrained to a proper consistence.

Edin. Ph. 1841.

Take of leaves of monkshood, fresh, any convenient quantity; beat them into a pulp; express the juice; subject the residuum to percolation with rectified spirit, so long as the spirit passes materially coloured; unite the expressed juice and the spirituous infusion; filter; distil off the spirit; and evaporate the residuum in the vapour-bath, taking care to remove the vessel from the heat as soon as the due degree of consistence shall be attained.

Ph. Borussica, 1847.

℞ Fresh herb of aconite. . . ℔x.

Cut, bruise, and press the herb; add to the residue a pound or a pound and a half of water, and press again; mix and strain the liquors, and evaporate them in a water-bath, at a temperature from 120° to 140° Fahr., with constant agitation, until reduced to ℔ij. Mix this with

Rectified spirit, sp. gr. 900 . ℔ij.

Let the mixture stand for 24 hours, occasionally shaking it, then filter, press the residue, and add to the mark

Rectified spirit, sp. gr. 900 . ℔ss.

Again strain and press.

Evaporate the mixed and filtered liquors in the water-bath, at a temperature from

120° to 140°, until reduced to the consistence of an extract.

Ph. Austr. 1855.

℞ Fresh herb of aconite . . . ℔ij.
Bruise in a stone mortar, then add
Rectified spirit . . . . ℔ij.

Digest for 24 hours, and press. Filter the liquor and distil off the spirit; then evaporate what remains at a gentle heat, by means of a water-bath, constantly stirring it, until it becomes dry. Keep it in a well-closed bottle.

Extractum aconiti alcoholicum. Dr. Fleming.

This is prepared by distilling off the spirit from tincture of aconite, made from the dried root, and evaporating to the consistence of an extract.

Med. Use.—Narcotic, and in some cases diuretic. Used in chronic rheumatism, intermittent fever, glandular swellings, and certain convulsive affections.

Dose.—Half a grain at first, which may, in some cases, be increased to 3 or 4 grains.

The extracts made by the processes of the Prussian and Austrian Pharmacopœias and by Dr. Fleming's process, are more active than the others, and should be given in smaller doses.

Extractum aloes. *Extract of aloes.*

(Extractum Aloës purificatum, Ph. 1836.)

Lond. Ph. 1851.

℞ Socotrine aloes . . . . ℥xv.
Boiling distilled water . . Cj.

Macerate for 3 days with a gentle heat; then strain, and set aside that the dross may subside. Pour off the clear liquor, and evaporate to a proper consistence.

Dubl. Ph. 1850.

Extractum aloes aquosum.

℞ Hepatic aloes, in coarse powder ℥iv.
Water . . . . . Oij.

Boil the aloes until it is dissolved; when the solution is cold, and the dregs have subsided, pour off the clear liquid, and evaporate it to a proper consistence.

Ph. Borussica, 1847.

℞ Aloes, in powder . . . . ℔ss.
Distilled water . . . . ℔ij.

Macerate for 48 hours, frequently shaking; then strain the clear liquor, and evaporate it in a water-bath at a temperature not exceeding 150° or 165° Fahr., until reduced to a pilular consistence. Dry this at a lower temperature, reduce it to powder, and keep it in a well-closed bottle.

Med. Use.—As a cathartic in doses from gr. v. to gr. xv. in form of pill.

Extractum aloes Barbadensis. *Extract of Barbadoes aloes.*

Lond. Ph. 1851.

Prepare this in the same manner as the extract of aloes is directed to be prepared.

Extractum anthemidis. *Extract of chamomile.*

Edin. Ph. 1841.

℞ Chamomile . . . . . ℔j.

Boil it with a gallon of water down to 4 pints; filter the liquor hot; evaporate in the vapour-bath to the due consistence.

Med. Use.—Stomachic and tonic.

Dose.—Grs. x. to ʒj.

Extractum arnicæ florum. *Extract of arnica flowers.*

Ph. Austr. 1855.

Prepared from dried arnica flowers in the same way as *Extractum absinthii* is directed to be made by this Pharmacopœia.

Ph. Græca, 1837.

℞ Arnica flowers . . . . 1 part.
Rectified spirit . . . . 3 parts.
Water . . . . . 5 „

Macerate for 2 days, then press, strain, distil off the spirit, and evaporate to the consistence of an extract.

Note.—Brown, leaving a yellow stain. When mixed with water, a flocculent precipitate is deposited.

Extractum arnicæ radicis. *Extract of arnica root.*

Ph. Austr. 1855.

Prepared from dried arnica root in the same way as *Extractum absinthii* is directed to be made by this Pharmacopœia.

Ph. Græca, 1837.

Made from arnica root, in the same way as the *Extractum arnicæ florum* of this Pharmacopœia.

Note.—Brown, forming a troubled solution in water.

Codex Medic. Hamberg. 1845.

℞ Arnica root	℔ij
Rectified spirit	℔iij.
Water	℔ix.

In other respects the same as the Ph. Græca.

Extractum belladonnæ. *Extract of belladonna.*

Lond. Ph. 1851.

Prepare this in the same manner as is directed concerning extract of aconite.

Edin. Ph. 1841.

Take of belladonna, fresh, any convenient quantity, bruise it in a marble mortar into a uniform pulp; express the juice; moisten the residuum with water, and express again. Unite the expressed fluids, filter them, and evaporate the filtered liquid in the vapour-bath to the consistence of firm extract, stirring constantly towards the close.

Dubl. Ph. 1850.

Take of fresh belladonna leaves, collected when the plant begins to flower, any convenient quantity.

Crush them in a mortar, express the juice, and allow it to stand for 24 hours. Pour off the clear liquor, and set it aside for subsequent use; and having placed the sediment on a calico filter, wash it with an equal bulk of distilled water, and mix the washings with the decanted liquor. When, by the application of a water-heat, coagulation has occurred, skim off the coagulated matter, filter the hot liquid through flannel, mix in now the washed sediment, and evaporate to the consistence of a firm extract, by a steam or water bath, constantly stirring, particularly towards the close of the evaporation.

Ph. Austr. 1855.

Prepared from fresh leaves of belladonna in the same way as *Extractum aconiti* is directed to be made by this Pharmacopœia.

Dose.—Quarter of a grain, gradually increased to 4 or 5 grains.

Extractum cacuminum spartii scoparii. *Extract of broom tops.*

Dubl. Ph. 1826.

To be made according to the instructions for *Extractum aloes hepaticæ*, substituting broom-tops for aloes.

Med. Use.—Employed as a diuretic in dropsy.

Dose.—ʒss to ʒj.

Extractum cantharidis. *Extrait de cantharides. Extract of cantharides.*

Soubeiran's Trait. Pharm. 1847.

℞ Powder of cantharides .	q. v.
Alcohol, sp. gr. 923 . .	q. s.

Exhaust the cantharides by two or three macerations in the alcohol: distil and evaporate the liquors to the consistence of an extract. The alcohol employed for this preparation ought to be set aside in order to be employed subsequently for the same purpose.

Extractum cannabis indicæ. *Extract of Indian hemp.*

Bengal Dispensatory.

Boil the dried tops of Indian hemp in rectified spirit, distil off the spirit, and evaporate the extract by a gentle heat.

Extractum cannabis indicæ purificatum. *Purified extract of Indian hemp.*

Dubl. Ph. 1850.

℞ Extract of Indian hemp, of commerce	℥j.
Rectified spirit	f ℥iv.

Dissolve the extract in the spirit, and when the drugs have subsided, decant the clear liquid, and evaporate by means of a water-bath, to the consistence of a soft extract.

Extractum cinæ ethereum. *Ethereal extract of worm-seed.*

Codex Medic. Hamberg. 1845.

℞ Worm-seed	℥iv.
Ether	℥xvj.

Macerate for three or four days, with frequent shaking; then press and filter, and distil off the ether until ⅓ remains: lastly, evaporate the residue to the proper consistence, and keep it in stoppered bottles.

Note.—Greenish-brown, having a strong smell of worm-seed, ℥iv may be obtained from ℔j of the seed.

Extractum cinchonæ siccum. *Essential salt of bark.*

Codex Ph. Franç. 1839.

Reduce pale cinchona bark to coarse powder; moisten it with half its weight of cold water, and when it has stood for twelve or fifteen hours, pack it closely in a displacement apparatus, and allow cold water to percolate through it, as long as it passes much charged with extract. Evaporate the liquor over a water-bath to the consistence of thick syrup, then spread it on earthenware plates, and dry it in a stove. Finally, chip it off the plates with a knife, and preserve it in small stoppered bottles.

Ph. Hannov. Nova, 1831.

℞. Roughly-powdered pale cinchona bark	℔iij.
Cold distilled water	℔xxxvj.

Macerate for 48 hours, and press. Macerate the residue again in ℔xvj. of distilled water, and press. Filter the mixed fluids, and evaporate them over the water-bath to the consistence of treacle. Dilute the syrupy fluid with distilled water, and again evaporate to the consistence of treacle; and repeat this process until, on the addition of the water, it forms a clear solution; it is then to be finally evaporated to the consistence of an extract.

Essential salt of bark, prepared as above, has been occasionally used in this country.

Extractum cinchonæ. *Extract of cinchona.*

Lond. Ph. 1851.

℞ Yellow cinchona, coarsely powdered	℔iij.
Distilled water	Ovj.

To the cinchona add Oiv of the water, and assiduously stir with a spatula until it is entirely moistened. Macerate for 24 hours and steam through linen. Macerate that which remains in the remaining water for 24 hours, and strain. Then, the liquors being mixed together, evaporate to a proper consistence.

Extractum cinchonæ pallidæ. *Extract of pale cinchona.*

Lond. Ph. 1851.

Extractum cinchonæ rubræ. *Extract of red cinchona.*

Lond. Ph. 1851.

Prepare these in the same manner as the extract of cinchona is directed to be prepared.

Extractum cinchonæ.

Edin. Ph. 1841.

℞ Any of the varieties of cinchona, but especially the yellow or red cinchona, in fine powder . . . . ℥iv.
Proof spirit . . . . f℥xxiv.

Percolate the cinchona with the spirit, distil off the greater part of the spirit, and evaporate what remains in an open vessel over the vapour-bath to a due consistence.

Med. Use. — Tonic, stomachic, and febrifuge.

Dose.—Grs. x to ʒss.

Extractum colchici. *Extract of colchicum.*

Lond. Ph. 1851.

℞ Fresh cormi of colchicum . lbj.

Take off the coat, and finish in the same manner as is directed concerning the extract of aconite.

Extractum colchici aceticum. *Acetic extract of colchicum.*

Lond. Ph. 1851.

℞ Cormi of colchicum, fresh . lbj.
Acetic acid . . . . . f℥iij.

Bruise the cormi, gradually sprinkling acetic acid, then express the juice, and evaporate it unstrained to a proper consistence.

Edin. Ph. 1841.

℞ Bulb of colchicum . . . lbj.
Pyroligneous acid . . . f℥iij.

Beat the colchicum to a pulp, gradually adding the acid; express the liquid, and evaporate it in a porcelain vessel, (not glazed with lead,) over the vapour-bath, to the due consistence.

Dubl. Ph. 1850.

℞ Colchicum root? dried . . ℥iv.
Dilute acetic acid . . . f℥viij.

Digest the root in the acid for 14 days, then filter, and evaporate by means of a water-bath, to the consistence of a soft extract.

Med. Use.—In gout and rheumatism.

Dose.—Gr. j to gr. iv twice or thrice a-day.

Extractum colocynthidis. *Extract of colocynth.*

Lond. Ph. 1851.

℞ Sliced colocynth, the seeds being removed . . . . lbiij.
Distilled water . . . Oss.

Macerate the colocynth for 36 hours, frequently pressing out with the hand. Strongly express the liquor and strain. Lastly, evaporate to a proper consistence.

Edin. Ph. 1841.

℞ Colocynth . . . . lbj.
Water . . . . . cong. ij

Boil gently for 6 hours, replacing the evaporated water occasionally. Strain the liquor while hot; and evaporate it in the vapour-bath to the due consistence.

Ph. Borussica, 1847.

℞ Colocynth, freed from the seeds, and cut . . . . lbj.
Rectified spirit, sp. gr. ·900 . lbvj.

Digest, at a tepid heat, for some days, occasionally shaking it, then press off the tincture, and add to the residue,

Rectified spirit, sp. gr. ·900,
Water, āā . . . . . lbiiss.

Digest, and press as before. Strain the mixed liquors, and evaporate them in a water-bath at a heat not exceeding 165°, to a pilular consistence; dry this at a lower heat, and reduce the product to powder.

Extractum colocynthidis compositum. *Compound extract of colocynth.*

Lond. Ph. 1836.

℞ Colocynth, cut in pieces . ℥vj.
Purified extract of aloes . ℥xij.
Scammony, powdered . . ℥iv.
Cardamoms [husked] powdered . . . . . ℥j.
Soap . . . . . ℥iij.
Proof spirit . . . . cong. j.

Macerate the colocynth in the spirit, with a gentle heat, for 4 days; strain the spirit, and add to it the aloes, scammony, and soap; afterwards evaporate to a proper consistence, the cardamoms being mixed towards the end.

Med. Use.—An effectual cathartic, in the dose of from grs. x to ʒ ss in the form of pill. Although replaced, in the Lond. Ph. of 1851, by *Pilula colocynthidis composita*, it is still much used.

SYNONYMES.

Extractum catharticum.—Lond. Ph. 1746. *Cathartic extract.*

Extractum colombæ. *Extract of Calumba.*

Ph. Borussica, 1847.

℞ Calumba root sliced . . . ℔j.
Rectified spirit, sp. gr. ·900 . ℔ij.

Digest in a warm place for some days, frequently shaking; press out strongly, and on the residue pour,

Rectified spirit,
Water, āā . . . . . ℔j.

Digest again, until the next day, frequently shaking the mixture, and press. Evaporate the mixed and strained liquors in a vapour-bath, at a temperature not exceeding 167° Fahr., until about the consistence of a pill mass, constantly stirring; then take it out, dry it with a gentle heat, and carefully reduce it to fine powder.

Note.—The powder should be of a brownish-yellow colour, and form a turbid solution with water.

Extractum conii. *Extract of hemlock.*

Lond. Ph. 1851.

Prepare this in the same manner as we have directed the extract of aconite to be prepared.

Edin. Ph. 1841.

Take of conium any convenient quantity; beat it into a uniform pulp in a marble mortar, express the juice and filter it. Let this juice be evaporated to the consistence of a very firm extract, either in a vacuum with the aid of heat, or spontaneously in shallow vessels exposed to a strong current of air freed of dust by gauze-screens.

This extract is of good quality only when a very strong odour of conia is disengaged by degrees on its being carefully triturated with aqua potassæ.

Dubl. Ph. 1850.

℞ Fresh hemlock, leaves collected when the plant begins to flower, any convenient quantity.

The method of preparation is the same as for *Extractum belladonnæ.*

Ph. Austr. 1855.

Prepared from the fresh plant in the same way as Extractum aconite is directed to be made by this Pharmacopœia.

Med. Use.—Sedative, alterative, and resolvent.

Dose.—From 1 grain to 15.

SYNONYME.

Succus cicutæ spissatus.—Lond. Ph. 1788. Dubl. Ph. 1807.

Extractum conii alcoholicum. *Alcoholic extract of hemlock.*

U. S. Ph. 1840.

℞ Hemlock, in coarse powder . ℔j.
Diluted alcohol . . . . Oiv.

Moisten the hemlock with Oss of the diluted alcohol, and having allowed it to stand for 24 hours, transfer it to an apparatus for displacement, and add gradually the remainder of the diluted alcohol. When the last portions of this shall have penetrated the hemlock, pour in sufficient water from time to time to keep the powder covered. Cease to filter when the liquid which passes begins to produce a precipitate in that which has been already filtered. Distil off the alcohol from the liquor, and evaporate the residue to a proper consistence.

Extractum cubebarum. *Extract of cubebs.*

Codex Medic. Hamberg. 1845

℞ Cubebs . . . . . ℔iv.
Water . . . . . ℔xxxvj.
Rectified spirit . . . ℔xvj.

Distil the cubebs with the water, until ℔xij have passed over; separate the oil from the distilled liquor, and return the latter to the still; again distil ℔xij, and separate the oil as before. The residue is now to be pressed, and macerated with ℔viij of rectified spirit for 24 hours; the fluid being poured off, the residue is to be again treated with the same quantity of spirit for 24 hours; the residue is now to be pressed, and the fluids filtered, and distilled until 6 parts remain; mix this with the extract formed by evaporating the aqueous decoctions. The two are now to be evaporated to the consistence of a thick syrup, and ʒiv of the oil added, and finally evaporated to the proper consistence.

Note.—Darkish brown, having the smell and taste of cubebs. Incompletely soluble in water; ʒvij may be obtained from ℔j of cubebs.

Extractum digitalis. *Extract of foxglove.*

Lond. Ph. 1836.

℞ Foxglove leaves, fresh . . . ℔j.

Bruise them, sprinkled with a little water, in a stone mortar; then press out the juice, and evaporate it, unstrained, to a proper consistence.

Edin. Ph. 1841.

This extract is best prepared from the fresh leaves of digitalis, by any of the processes indicated for extract of conium.

Med. Use.—The exhibition of foxglove in this form requires great caution, as the extract is liable to vary from a variety of causes.

Extractum elaterii. *Extract of elaterium.*

Lond. Ph. 1851.

Slice ripe wild cucumbers, and strain the juice, very gently expressed, through a very fine hair sieve; then set it by for some hours, until the thicker part has subsided. The thinner, supernatant part being rejected, dry the thicker part with a gentle heat.

Edin. Ph. 1841.

Take of the fruit of the momordica elaterium, before it is quite ripe, any convenient quantity; cut the fruit, and express the juice gently through a fine sieve; allow the liquid to rest till it becomes pretty clear; pour off the supernatant liquor, which may be thrown away, and dry the feculence with a gentle heat.

Dubl. Ph. 1850. *Elaterium.*

℞ Fruit of momordica elaterium, before it is quite ripe, any convenient quantity.

Cut the fruit, and express the juice gently through a fine sieve; allow the liquid to rest until it becomes pretty clear; pour off the supernatant liquid, which may be thrown away, and dry the feculence with a gentle heat.

Med. Use.—A hydragogue cathartic.

Dose.—From $\frac{1}{16}$ to $\frac{1}{8}$ of a grain, when good.

SYNONYME.

Elaterium. Lond. Ph. 1721, 1746, 1788. Dubl. Ph. 1807.

Extractum filicis maris. *Extract of male fern.*

Ph. Austr. 1855.

℞ Male fern root, recently dried and bruised. . . . . ℔j.
Ether . . . . . ℔iij.

Macerate in a glass vessel for several days, then press. Distil the pressed and filtered liquor until half a pound remains in the retort, and evaporate this by the heat of a water-bath until it acquires the consistence of a soft extract.

Extractum gentianæ. *Extract of gentian.*

Lond. Ph. 1851.

℞ Sliced gentian. . . . . ℔iij.
Distilled water . . . . Ovj.

Macerate for 12 hours in Oiv of the water; pour off the liquor, and strain. Add 2 pints of the water to the remainder, macerate for 6 hours, press out the liquor slightly, and strain. Lastly, evaporate the liquors, mixed together, to a proper consistence.

Edin. Ph. 1841.

Take of gentian any convenient quantity, bruise it to a moderately-fine powder; mix it thoroughly with half its weight of distilled water; in twelve hours put it into a proper percolator, and exhaust it by percolation with temperate distilled water; concentrate the liquid, filter before it becomes too thick, and evaporate in the vapour-bath to a due consistence.

Dubl. Ph. 1850.

℞ Gentian root, in thin slices . ℔j.
Distilled water . . . . Oiij.

Macerate the gentian in Oiss of the water for 6 hours, then strain and express. Add to the residue the remaining Oiss of water. Macerate again for 6 hours, strain and express. Finally, mix the liquors, and evaporate by a steam or water bath to a proper consistence.

Med. Use.—A stomachic bitter.

Dose.—Ten grains to half a drachm, twice or thrice a day.

Extractum glycyrrhizæ. *Extract of liquorice.*

Lond. Ph. 1851.

℞ Liquorice, sliced. . . ℔ijss.
Distilled water, boiling . cong. ij.

Macerate for twenty-four hours, then boil down to a gallon, and strain the liquor whilst hot; lastly, evaporate to a proper consistence.

Edin. Ph. 1841.

Cut liquorice root into small chips; dry it thoroughly with a gentle heat, reduce it to a moderately-fine powder, and proceed as for extract of gentian.

Dubl. Ph. 1850.

℞ Liquorice root, in thin slices, dried and reduced to a coarse powder . . . . . ℔j.
Distilled water . . . . Oiij.

The method of preparation is the same as for *Extractum gentianæ.*

Med. Use.—Emollient in cough, and in bronchial affections.

Extractum graminis liquidum. *Mellago graminis. Fluid extract of couch grass.*

Ph. Hannov. Nova, 1831.

℞ Fresh root of couch grass. . ℔xij.
Water . . . . . ℔vj.

Cut the root, and pound it in a mortar with the water; press out the liquor; strain, and evaporate it to the consistence of new honey.

Extractum hæmatoxyli. *Extract of logwood.*

Lond. Ph. 1851.

℞ Sliced logwood . . . . ℔iiss.
Boiling distilled water . . Oij.

Prepare the extract in the same manner as is directed concerning extract of liquorice.

Edin. Ph. 1841.

℞ Logwood, in fine chips . . ℔j.
Boiling water . . . . conj. j.

Macerate for 24 hours; then boil down to 4 pints, strain, and concentrate in the vapour-bath to the due consistence.

Med. Use.—An astringent in diarrhœa and dysentery.

Dose.—From ten to thirty grains.

SYNONYME.

Ext. Ligni Campechensis. Lond. Ph. 1746, 1788.

Extractum hyoscyami. *Extract of henbane.*

Lond. Ph. 1851.

Prepare this in the same manner as we have directed the Extract of aconite to be prepared.

Edin. Ph. 1841.

This extract is to be prepared from the fresh leaves of hyoscyamus, by any of the processes directed for extract of conium.

Dubl. Ph. 1850.

℞ Fresh hyoscyamus leaves, collected when the plant begins to flower, any convenient quantity.

The method of preparation is the same as for *Extractum belladonnæ*.

Med. Use.—Sedative and antispasmodic.

Dose.—Five grains to ten grains.

Extractum hellebori. *Extract of black hellebore.*

U. S. Ph. 1840.

℞ Black hellebore, in coarse powder	℔j.
Diluted alcohol	Oiv.

Moisten the black hellebore with Oss of the diluted alcohol, and having allowed it to stand for 24 hours, transfer it to an apparatus for displacement, and add gradually the remainder of the diluted alcohol. When the last portions shall have penetrated the hellebore, pour in sufficient water from time to time to keep the powder covered. Cease to filter when the liquid which passes begins to produce a precipitate in that which has been already filtered. Distil off the alcohol from the liquor, and evaporate the residue to a proper consistence.

Extractum inulæ. *Extract of Elecampane.*

Ph. Suecica, 1845.

Elecampane root, roughly powdered, is to be extracted 3 or 4 times with a mixture of equal parts of water and proof spirit; the liquors are then to be strained, the spirit distilled off, and the remainder evaporated to the consistence of an extract.

Extractum Ipecacuanhæ. *Extract of ipecacuanha.*

Ph. Borussica, 1847.

℞ Ipecacuanha root, in coarse powder	℔j.
Rectified spirit, sp. gr. ·900	℔iij.

Macerate in a close vessel for some days, then press. To the residue add,

Rectified spirit, sp. gr. ·900	℔ij.

Macerate as before, and press. Evaporate the mixed liquors by the heat of a water-bath, not exceeding 165° Fahr., until reduced to the consistence of an extract. Dissolve this in four parts of water, filter it, and evaporate as before to the consistence of syrup, then dry it at a lower temperature, and reduce it to powder.

Extractum jalapæ. *Extract of jalap.*

Lond. Ph. 1851.

℞ Jalap, powdered	℔iiss.
Rectified spirit	conj. j.
Distilled water	conj. ij.

Macerate the jalap-root in the spirit for 4 days, and pour off the tincture. Boil down the residue in the water to half a gallon; afterwards strain the tincture and the decoction separately, and let the latter be evaporated, and the former distilled, until each thickens. Lastly, mix the extract with the resin, and evaporate to a proper consistence.

This extract should be kept *soft*, which may be fit to form pills, and *hard*, which may be rubbed to powder.

Extractum sive resina jalapæ.

Edin. Ph. 1841.

Take any convenient quantity of jalap, in moderately fine powder; mix it thoroughly with enough of rectified spirit to moisten it well; put it in 12 hours into a percolator, and exhaust the powder with rectified spirit; distil off the greater part of the spirit, and concentrate the residuum over the vapour-bath to a du consistence.

Med. Use. A hydragogue.

Dose.—Grs. x to ℈j.

EXTRACTUM JUGLANDIS. *Extract of butter-nut.*

U. S. Ph. 1850.

℞ The inner bark of the root of the Juglans cinerea in coarse powder, ℔j.; water, a sufficient quantity. Mix the bark with a pint of the water, and after allowing the mixture to stand for 24 hours, introduce it into an apparatus for displacement, and pour water upon it gradually until the liquid passes, but slightly impregnated with the properties of the bark. Heat the filtered liquid to the boiling point, strain and evaporate to a proper consistence.

EXTRACTUM JUGLANDIS FOLIORUM. *Extract of walnut leaves.*

Ph. Borussica, 1847.

℞ Walnut leaves, cut . . . ℔j.
Rectified spirit of wine, sp. gr. ·897 to ·900 . . . ℔iij.

Digest in a warm place for some days, frequently shaking, press out strongly, and on the residue pour,

Rectified spirit of wine,
Water, āā . . . . . ℔iss.

Digest again until the next day, frequently shaking it, and press. Evaporate the mixed and strained liquors in a vapour-bath at a temperature not exceeding 167° Fahr., until the mass cannot be poured out, but may be drawn out in strings with a spatula.

Note.—It should be of a dark-brown colour, and form a turbid solution with water.

EXTRACTUM KRAMERIÆ. *Extract of krameria.*

Edin. Ph. 1841.

This extract is to be prepared from krameria root in the same way with that of liquorice root.

Med. Use.—Astringent.

Dose.—Grs. x. to ʒj.

EXTRACTUM LACTIS. *Extract of milk.*

Plenck's Ph. 1804.

℞ Best cow's milk, any quantity.

Let it be evaporated to dryness over a slow fire; constant stirring must be employed, lest towards the end it may be burned.

EXTRACTUM LACTUCÆ. *Extract of lettuce.*

Lond. Ph. 1851.

Prepare this in the same manner as we have directed the Extract of aconite to be prepared.

Med. Use.—Considered by some to be a valuable sedative.

Dose.—Grs. v. to grs. x.

EXTRACTUM LUPULI. *Extract of hops.*

Lond. Ph. 1851.

℞ Hop. . . . . ℔iiss.
Distilled water, boiling. . Cij.

Prepare the extract in the same manner as we have directed the Extract of liquorice to be prepared.

Edin. Ph. 1841.

This extract is prepared from hops in the same way with the Extract of logwood.

Med. Use.—Sedative.

Dose.—Grs. v. to grs. xx.

SYNONYME.

Ext. Humuli.—Lond. Ph. 1809, 1824.

EXTRACTUM MALATIS FERRI. *Extractum ferri pomati.*

Ph. Austr. 1855.

℞ Ripe sour apples, peeled and bruised . . . . . ℔vj.
Pure iron filings. . . . ℔j.

Mix and digest in a warm place for some weeks, frequently stirring it, and replacing the water that may evaporate, until the mass blackens, then press out the liquor, filter it, and evaporate by the heat of a water-bath to the consistence of an extract.

EXTRACTUM MEZEREI ÆTHEREUM. *Ethereal extract of mezereon.*

Ph. Borussica, 1847.

℞ Mezereon bark, cut small . ℔ij.
Rectified spirit, sp. gr. ·900. ℔viij.

Digest for some days, occasionally shaking it, and press strongly. To the residue add,

Rectified spirit, sp. gr. ·900 . ℔vj.

and treat as before. Distil the mixed and filtered liquors by the heat of a water-bath to recover the spirit, and then evaporate to the consistence of an extract. Put this extract into a bottle, and add,

Ether . . . . . ℔j.

Macerate for four days, frequently shaking it, then decant the liquor, and again add,

Ether . . . . . ℔ss.

Repeat the maceration. Distil the ether from the mixed and filtered liquors until reduced to one-fourth, and then evaporate to the consistence of an extract.

Ph. Austr. 1855.

Prepared from mezereon bark, in the same way as Extract of male fern is directed to be made by this Pharmacopœia.

EXTRACTUM MEZEREI SPIRITUOSUM. *Spirituous extract of mezereon.*

Codex, Medic. Hamberg, 1845.

℞ Mezereon bark . . . . ℔j.
Rectified spirit . . . . ℔iv.

Macerate for three days and press; then repeat the process. Mix the tinctures and distil to $\frac{1}{8}$, and evaporate to the proper consistence of an extract.

Note.— Greenish-brown colour; insoluble in water. To be kept in stoppered bottles. ℥iss. obtained from ℔j.

EXTRACTUM MYRRHÆ. *Extract of myrrh.*

Ph. Borussica, 1847.

℞ Myrrh, powdered. . . . ℔ss.
Distilled water . . . . ℔ij.

Macerate for 48 hours, frequently shaking. Set by the liquor, that the dregs may subside; strain and evaporate in a vapour-bath, at a temperature not exceeding 149° to 167° Fahr., until about the consistence of a pill mass, constantly stirring. Then take it out, dry it with a gentle heat, and keep it in fine powder in a well-closed vessel.

Note.—It should be of a reddish-yellow colour, and form a turbid solution with water.

EXTRACTUM NICOTIANÆ. *Extract of tobacco.*

Ph. Borussica, 1847.

℞ Tobacco leaves . . . . ℔j.
Rectified spirit, sp. gr. ·900. ℔ij.

Digest in a warm place for some days, frequently shaking; press out strongly, and on the residue pour,

Rectified spirit,
Water, āā . . . . . ℔j.

Digest again until the next day, frequently shaking the mixture, and press. Evaporate the mixed and strained liquors in a vapour-bath, at a temperature not exceeding 167° Fahr., with constant agitation until the mass cannot be poured out, but may be drawn out with a spatula in strings.

Note.—It should be of a yellowish-brown colour, and form a turbid solution with water.

EXTRACTUM NUCIS VOMICÆ. *Extract of nux vomica.*

Lond. Ph. 1851.

℞ Nux vomica. . . . . ℥viij.
Rectified spirit . . . . Oiij.

Apply steam to the nux vomica so that it may be softened. Afterwards bruise the same, cut into thin slices, and dry, and macerate for 7 days in Oij of the spirit. Press out the tincture and strain. Macerate that which remains, again, in Oj of the spirit for 3 days: then express again, and strain. The tinctures being mixed together, let the

greater part of the spirit distil: let that which remains be evaporated to a proper consistence.

Edin. Ph. 1841.

Take of nux vomica any convenient quantity; expose it in a proper vessel to steam till it is completely softened; slice it, dry it thoroughly, and immediately grind it in a coffee-mill; exhaust the powder, either by percolating it with rectified spirit, or by boiling it with repeated portions of rectified spirit, until the spirit comes off free of bitterness. Distil off the greater part of the spirit; and evaporate what remains in the vapour-bath to a proper consistence.

Med. Use.—This extract has been found useful in incontinence of urine.

Dose.—From half a grain to two grains.

Extractum opii. *Extract of opium.*

Lond. Ph. 1851.

℞ Powdered opium . . . ℔iss.
Distilled water . . . . Ov.

Gradually add Oiiss of the water to the opium and macerate for 24 hours, frequently stirring with a spatula; then strain. Macerate that which remains in the remaining water for 24 hours, and strain. Lastly, evaporate the strained liquors to a proper consistence.

Edin. Ph. 1841. *Extractum opii.*

℞ Opium . . . . . ℔j.
Water . . . . . Ov.

Cut the opium into small fragments; macerate it for 24 hours in a pint of water, break down the fragments with the hand, express the liquid with a pretty strong pressure; break down the residuum again in another pint of the water, let it macerate for 24 hours, and express the liquid; repeat the maceration or expression in the same way till the water is all used. Filter the successive infusions as they are made, passing them through the same filter; unite and evaporate them in the vapour-bath to the due consistence.

Dubl. Ph. 1850. *Extractum opii aquosum.*

℞ Opium . . . . . ℔j.
Water . . . . . Ovj.

Cut the opium into thin slices, macerate it for 24 hours in Oij of the water, and decant; macerate the residuum for 12 hours with a second Oij of the water, decant, and repeat this process with the rest of the water, subjecting the insoluble residuum to strong expression. Filter the successive infusions and expressed liquor, and evaporate them in a water-bath to a proper consistence.

Med. Use.—Narcotic, sedative, and antispasmodic.

Dose.—Half a grain to 2 grains.

SYNONYMES.

Opium colatum. Extractum Thebaicum. Lond. Ph. 1721, 1746.

Opium purificatum. Lond. Ph. 1788.

Extractum opii absque narcotina. *Extract of opium deprived of narcotine.*

Codex, Ph. Franç. 1839.

Mix extract of opium with cold water to the consistence of a syrup; put this into a bottle, and add to it 8 times its volume of ether; shake them together repeatedly during a day or two, then decant off the ethereal solution, and repeat this process with fresh ether as long as it dissolves anything. Finally, evaporate the *aqueous solution* that shall remain to a pilular consistence, and preserve this for use.

Extractum papaveris. *Extract of poppy.*

Lond. Ph. 1851.

℞ Poppy [capsules], bruised,
the seeds being taken out ℥xv.
Distilled water, boiling . cong. j.

Macerate for 24 hours; then boil down to 4 pints, and strain the liquor while hot; lastly, evaporate to a proper consistence.

Edin. Ph. 1841.

The same as the London formula, except that the evaporation is directed to be conducted over a vapour-bath.

Med. Use.—A mild narcotic in the *dose* of from grs. ij. to ℈j., in pills.

Extractum pareiræ. *Extract of pareira.*

Lond. Ph. 1851.

Prepare this in the same manner as we have directed the Extract of logwood to be prepared.

Edin. Ph. 1851.

This extract is to be prepared from pareira root in the same way with the extract of liquorice root.

Med. Use.—Diuretic.

Dose.—Gr. x. to ʒss.

Extractum podophylli. *Extract of May apple.*

U. S. Ph. 1850.

℞ The root of the podophyllum peltatum in coarse powder ℔ j, alcohol 4 pints, water a sufficient quantity. Macerate the root with the alcohol for 4 days; then filter by means of an apparatus for displacement, and when the liquid ceases to pass, pour gradually upon the root sufficient water to keep the surface covered. When the filtered liquor measures 4 pints, set it aside, and proceed with the filtration until 6 pints of infusion are obtained. Distil off the alcohol from the tincture, and evaporate the infusion till the liquids respectively are brought to the consistence of thin honey; then mix them and evaporate so as to form an extract.

Extractum quassiæ. *Extract of quassia.*

Edin. Ph. 1841.

This extract is to be prepared from quassia in the same way with the extract of liquorice root.

Med. Use.—Stomachic.

Dose.—Grs. v. to grs. xv.

Extractum ratanhæ. *Extract of rhatany.*

Ph. Borussica, 1847.

℞ Rhatany root, finely bruised.	℔j.
Boiling water	℔vij.

Macerate for 24 hours in 4 pounds of the water, press, and pour on the residue the remainder of the water, and digest, &c., as before.

Set by the liquors that the dregs may subside; decant, strain, and evaporate the mixed liquor with a gentle heat, avoiding ebullition, and constantly stirring, until 2 pounds remain. Then evaporate in a porcelain vessel in a vapour-bath at a temperature from 149° to 167° Fahr., constantly stirring, until the mass cannot be poured out, but may be drawn out in strings with a spatula; finally, dry it in a warm place.

Note.—It should be a bright powder of a dark-red colour, forming a turbid, brownish-red solution with water.

Extractum rhei. *Extract of rhubarb.*

Lond. Ph. 1851.

℞ Rhubarb, powdered . . .	℥xv.
Proof spirit	Oj.
Distilled water	Ovij.

Macerate for 4 days, afterwards strain, and set by, that the dregs may subside. Pour off the liquor, and evaporate it, unstrained, to a proper consistence.

Edin. Ph. 1841.

℞ Rhubarb	℔j.
Water	Ov.

Cut the rhubarb into small fragments, macerate it for 24 hours in 3 pints of the water, filter the liquor through a cloth, and express it with the hands or otherwise moderately; macerate the residuum with the rest of the water for 12 hours at least, filter the liquor with the same cloth as before, and express the residuum strongly. The liquors, filtered again if necessary, are then to be evaporated together to a proper consistence in the vapour-bath.

The extract, however, is obtained of finer quality by evaporation in a vacuum with a gentle heat.

Dubl. Ph. 1850.

℞ Rhubarb, in thin slices . . ℔j.
Water . . . . . Ov.

Macerate the rhubarb for 24 hours in 3 pints of the water, filter the liquor through a cloth, and express; macerate the residuum with the rest of the water for 12 hours, filter the liquor through the cloth previously used, and express the residuum strongly. The liquors, filtered again if necessary, are to be mixed, and evaporated to a proper consistence in a water-bath.

Med. Use.—Purgative.

Dose.—Grs. x. to ʒss. in pills.

Extractum sarzæ. *Extract of sarsaparilla.*

Lond. Ph. 1836.

℞ Sarsaparilla, sliced . . ℔iiss.
Distilled water, boiling . cong. ij.

Macerate for 24 hours; then boil down to a gallon, and strain the liquor while hot; lastly, evaporate to a proper consistence.

Dose.—ʒss. to ʒij.

Soubeiran's Trait. Pharm.

℞ Sarsaparilla, divided . . q. p.
Alcohol, sp. gr. ·923 . . q. s.

The root is moistened with half its weight of alcohol; it is then heaped up in the apparatus for lixiviation, and washed with three parts of alcohol; this is displaced in a great measure by water, and the alcoholic liquors are distilled. The residue of the distillation is evaporated to the consistence of an extract.

Extractum sarzæ liquidum. *Fluid extract of sarsaparilla.*

Lond. Ph. 1851.

℞ Sarsaparilla . . . . ℔iiiss.
Distilled water . . . . Cv.
Rectified spirit . . . . f ℥ij.

Boil down the sarsaparilla in 3 gallons of the water to 12 pints; pour off the liquor, and strain whilst yet hot. Boil down the sarsaparilla again in the remaining water to a half, and strain. Evaporate the liquors mixed together, to 18 fluidounces, and when the extract shall have cooled, mix in the spirit.

Extractum sarzæ fluidum.

Edin. Ph. 1841.

℞ Sarza, in chips . . . ℔j.
Boiling water . . . . Ovj.

Digest the root for 2 hours in 4 pints of the water; take it out, bruise it, replace it, and boil for 2 hours; filter and squeeze out the liquid; boil the residuum in the remaining 2 pints of water, and filter and squeeze out this liquor also; evaporate the united liquors to the consistence of thin syrup; add, when the product is cool, as much rectified spirit as will make in all 16 fluidounces. Filter.

This fluid extract may be aromatized with volatile oils or warm aromatics.

Extractum sarsaparillæ fluidum.

Dubl. Ph. 1850.

℞ Sarsaparilla . . . . ℔j.
Boiling water . . . . Oviij.
Rectified spirit, as much as sufficient.

Digest the sarsaparilla in five pints of the water for 2 hours, at a temperature near 212°, and then decant. Add the rest of the water, digest again for 2 hours, and decant. Evaporate the mixed liquors by a steam or water heat to the consistence of a thin syrup, and when the product has cooled, add as much rectified spirit as will make the entire 20 ounces.

Extractum sive resina scammonii. *Extract,* or *resin of scammony.*

Edin. Ph. 1841.

Take any convenient quantity of scammony in fine powder; boil it in successive portions of proof spirit till the spirit ceases to dissolve anything; filter; distil the liquid till little but water pass over. Then pour away the watery solution from the resin at the bottom; agitate the resin with succes-

sive portions of boiling water till it is well washed; and lastly, dry it at a temperature not exceeding 240°.

Med. Use.—A drastic cathartic in the dose of from grs. viij. to grs. xii.

Extractum scillæ. *Extract of squill.*

Ph. Borussica, 1847.

℞ Squill root, well sliced . . ℔iv.
Boiling water, as much as may be sufficient to form a paste.

Set aside for 24 hours, occasionally shaking, and separate the liquor by means of a press. On the residue pour a smaller quantity of water than before, and after 12 hours, squeeze through a press. Decant and strain the liquors, and evaporate them with a gentle heat, avoiding ebullition, until 12 pounds remain, constantly stirring. Set aside for some time, decant the liquor into a vapour-bath at a temperature of from 149° to 167° Fahr., and evaporate until the mass cannot be poured out, but may be drawn out in strings with a spatula; then dry it in a warm place, and reduce it to powder.

Note.—It should be of a rather yellowish colour, and form a slightly turbid solution with water.

Extractum senegæ. *Extract of senega.*

Ph. Borussica, 1847.

℞ Senega root, sliced . . . ℔j.
Rectified spirit, sp. gr. ·900 . ℔ij.

Digest in a warm place for some days, frequently shaking; press out strongly, and on the residue pour,

Rectified spirit,
Water, āā . . . . . ℔j.

Digest again until the next day, frequently shaking the mixture, and press. Evaporate the mixed and strained liquors in a vapour-bath at a temperature not exceeding 167° Fahr., with constant agitation, until the mass cannot be poured out, but may be drawn out with a spatula in strings.

Note.—It should be of a yellowish-brown colour, and form a turbid solution with water.

Extractum sennæ. *Extract of senna.*

Ph. Borussica, 1847.

℞ Senna leaves . . . . ℔j.
Tepid water (104° Fahr.) ℔viiss.

Add ℔iv of the water so as to form a pasty mass; after 24 hours, squeeze through a press, and repeat this operation with the remainder of the water. Pour off and strain the liquors, and evaporate them in a vapour-bath (149° to 167° Fahr.) with continual agitation, until about the consistence of a thick extract. Dissolve the residue when cold in

Distilled water, 4 parts.

Filter the solution, and evaporate with constant agitation until the mass cannot be poured out, but may be drawn out in strings with a spatula.

Note.—It should be of a brown colour, forming a limpid solution with water.

Extractum stramonii. *Extract of thorn-apple.*

Lond. Ph. 1851.

℞ Thorn-apple seeds . . . ℥xv.
Distilled water, boiling . cong. j.

Macerate for 4 hours, in a vessel lightly covered, near the fire; afterwards take out the seeds, and bruise them in a stone mortar; return them when bruised to the liquor. Then boil down to 4 pints, and strain the liquor while hot. Lastly, evaporate to a proper consistence.

Edin. Ph. 1841.

Take of seeds of stramonium any convenient quantity; grind them well in a coffee-mill.

Rub the powder into a thick mass with proof spirit; put the pulp into a percolator, and transmit proof spirit till it passes colourless; distil off the spirit, and evaporate what remains in the vapour-bath to a proper consistence.

Med. Use.—Narcotic and anodyne; useful in maniacal paroxysms, sciatica, and chronic rheumatism.

Dose.—From a fourth of a grain to one grain.

EXTRACTUM STYRACIS. *Extract of storax.*

Edin. Ph. 1841.

Take any convenient quantity of storax, in fine powder; exhaust it by boiling it in successive quantities of rectified spirit; filter the spirituous solutions; distil off the greater part of the spirit; evaporate the remainder over the vapour-bath to the consistence of a thin extract.

EXTRACTUM TARAXACI. *Extract of dandelion.*

Lond. Ph. 1851.

Prepare this in the same manner as we have directed the Extract of liquorice to be prepared.

Edin Ph. 1841.

℞ Fresh root of taraxacum . ℔j.
Boiling water . . . . cong. j.

Proceed as for the preparation of Extract of poppy heads.

Med. Use.—Tonic, diuretic, and aperient. It has been found a very valuable medicine in various disorders and derangements of the abdominal viscera; more especially in chronic affections of the stomach and liver.

Dose.—From gr. x. to ʒss.

EXTRACTUM TARAXACI LIQUIDUM. *Mellago taraxaci. Fluid extract of taraxacum.*

Ph. Hannov. nova, 1831.

℞ Fresh roots and young herbs of dandelion, collected in the beginning of the spring. . . . ℔xij.
Water . . . . . ℔vj.

Cut the herbs, and pound them in a mortar with the water; press out the liquor; strain, and evaporate it to the consistence of new honey.

EXTRACTUM UVÆ URSI. *Extract of bear's whortle-berry.*

Lond. Ph. 1851.

Prepare this in the same manner as we have directed the Extract of hop to be prepared.

Med. Use.—In affections of the urinary organs.

Dose.—Grs. vi. to ʒss.

EXTRACTUM VALERIANÆ. *Extract of valerian.*

Ph. Borussica, 1847.

℞ Root of the lesser valerian, sliced . . . . . ℔ij.
Distilled water. . . . ℔ix.

Macerate for 48 hours in 5 pounds of the water, frequently shaking, and squeeze strongly through a press. On the residue, pour the remainder of the distilled water. Let it stand 24 hours, and then press out strongly. Strain the liquors, and evaporate them, constantly stirring, in a porcelain vessel in a vapour-bath (with a temperature from 122° Fahr. to 140° Fahr.), to one pound, then again evaporate the cooled and filtered liquor to the consistence of syrup. Keep it in a well-closed vessel. It should be of a brownish-black colour, and form a limpid solution with water.

Note.—All extracts should be kept in a dry place. They should have the odour of the vegetables from which they are prepared. In those extracts prepared with spirit of wine, the spirit should not be separated by distillation, but should be expelled by evaporation, as ordered.

FARINACEOUS FOODS.

Several amylaceous substances or mixtures are sold, which come under the above general denomination. Among these are the following:—

Bright's Custard Powder.

This is a preparation of potato starch.

Bright's nutritious farina.

Potato starch aromatized.

Densham's farinaceous food.

This is composed of three parts of wheaten flour, and one part of barley-meal, slightly baked. The barley-meal renders it a little laxative.

English arrow-root.

The substance sold under this name is merely potato starch.

Ervalenta.

The meal of lentils (*Ervum lens*). It is recommended to be used with treacle to counteract habitual constipation.

Gardiner's alimentary preparation.

This is rice meal, very finely ground. It purports to have been prepared after the instructions of the celebrated Professor Liebig.

Hard's farinaceous food.

Wheat flour slightly baked. This has been in much repute for many years; it is very carefully prepared.

Fel tauri inspissatum. *Inspissated ox-gall.*

Ph. Borussica, 1847.

Heat, and then strain fresh ox-gall, and evaporate it in the water-bath at a temperature from 120° to 140° Fahr., until reduced to the consistence of an extract.

Ferrum. *Iron. Symb.* Fe. *Eq.* 28.

Metallic iron is sometimes met with in nature; in a state of combination, it is very abundant. The principal ores of iron are *clay-ironstone*, in which the iron exists as a carbonate of the protoxide; *Red hematite*, consisting of sesquioxide of iron; and *black* or *magnetic oxide of iron*.

Ferrum redactum. *Reduced iron. Fer reduit.* Quevenne's iron. *Iron reduced by hydrogen.*

Dubl. Ph. 1850.

Ferri pulvis. *Powdered iron.*

℞ Peroxide of iron,
Zinc, in small pieces,
Oil of vitriol,
Water, of each a sufficient quantity.

Introduce into a gun-barrel as much of the peroxide of iron as will occupy the length of about 10 inches, confining it to the middle portion of the barrel by plugs of asbestos. Let the gun-barrel be now placed in such a furnace as is used for organic analysis, one end of it being fitted by means of a cork into a bent adapter, whose further extremity dips in water, while the other end (of barrel) is connected with a bottle containing the zinc and water, with the intervention, however, of a desiccation tube, including fragments of caustic potash, and a small bottle half filled with oil of vitriol. Matters being thus arranged, a little oil of vitriol is to be poured into the bottle containing the water and zinc, with the view of developing a sufficiency of hydrogen to expel the air from the interior of the apparatus. As soon as this object is considered to have been accomplished, the part of the tube containing the peroxide of iron must be surrounded with ignited charcoal; and, when it is thus brought to a low, red heat, the oil of vitriol is to be gradually added to the zinc, so as to cause a steady current of hydrogen to pass through the oil of vitriol and desiccation tube into the gun-barrel. As soon as the reduction of the oxide is completed, which may be judged to have taken place when the gas-bubbles escape at apparently the same rate through the water in which the adapter terminates, and through the bottle containing the oil of vitriol, the fire is to be removed (a slow current of hydrogen being still continued), and when the gun-barrel has assumed the temperature of the air, its metallic contents should be extracted, and preserved in an accurately-stopped bottle.

Ferri Ammonio-chloridum. *Ammonio-chloride of iron.*

Lond. Ph. 1851.

℞ Sesquioxide of iron . . .	℥iij.
Hydrochloric acid . . .	Oss.
Hydrochlorate of ammonia .	℔iiss.
Distilled water	Oiij.

Mix the sesquioxide with the acid, and digest in a sand-bath, frequently stirring until it be dissolved; afterwards add the hydrochlorate, previously dissolved in the water; strain, and evaporate the solution until the salt may be dried. Rub this into powder.

Note.—Pulverulent, with an orange colour, it is dissolved in proof spirit and in water. Either solution, potash being added, evolves ammonia, and throws down about 7 grains of sesquioxide of iron from 100 grains of this salt.

Med. Use.—Tonic, emmenagogue, and aperient.

Dose.—Gr. v. to gr. xx.

SYNONYMES.

Ammoniacum hydrochloratum ferratum.

Flores salis ammoniaci martiales. Lond. Ph. 1721.

Flores martiales. Lond. Ph. 1746.

Ferrum ammoniacale. Lond. Ph. 1788.

Ferrum ammoniatum. Lond. Ph. 1809, 1824.

Ferri ammonio-citras. *Ammonio-citrate of iron. Citrate of iron and ammonia.*

Lond. Ph. 1851.

℞ Sulphate of iron . . .	℥xij.
Carbonate of soda . . .	℥xiiss.
Citric acid	℥vj.
Solution of ammonia . .	f ℥ix.
Boiling distilled water . .	Oxij.

Dissolve the sulphate and carbonate separately in 6 pints of the water. Mix the solutions whilst yet hot, and set aside, that that which is thrown down may subside. The supernatant liquor being poured off, wash this frequently with water, and dissolve, with the acid added, by the assistance of heat. Then, when it has cooled, the ammonia being mixed in, evaporate the solution to the thickness of a syrup. Dry this, thinly spread upon smooth earthen plates, with a gentle heat. It should be kept in a well-closed vessel.

Note.—It is dissolved in water. The solution changes the colour of neither litmus nor turmeric; neither does it become blue on ferrocyanide of potassium being added; but either potash or solution of lime being added, it throws down sesquioxide of iron, and evolves ammonia. About 34 grains of sesquioxide of iron are thrown down from 100 grains dissolved in water, on potash being added.

Dubl. Ph. 1850.

℞ Citric acid	℥iv.
Distilled water	℥xvj.
Sulphate of iron . . .	℥v.
Solution of ammonia . .	f ℥iv.,
or as much as is sufficient.	

Dissolve the citric acid in the water with the aid of heat, and, having converted the sulphate of iron into the hydrated peroxide of iron, as directed in the formula for ferri peroxydum hydratum, introduce the product into the capsule containing the solution of citric acid, and boil for 20 minutes. When the solution has cooled, add, constantly stirring, the ammonia in slight excess, and having transferred the solution thus obtained to delf dinner-plates, evaporate it to dryness by a steam or water heat. Lastly, chip off the film of dry salt which adheres to the plates, and preserve it in well-stopped bottles.

It is sometimes prepared in the following manner:—

℞ Crystallized citric acid . . .	℥iv.
Clean iron filings, or small iron nails	℥ij.
Distilled water	q. s.
Solution of ammonia . . .	q. s.

Dissolve the citric acid in twenty times its weight of water in a Wedgwood's dish, add the iron, and apply a gentle heat until effervescence ceases, and no more iron is dissolved, renewing the water from time to time as it evaporates; filter the solution and add solution of ammonia until

it is slightly in excess; evaporate by the heat of a water-bath, until it acquires a syrupy consistence, then spread it out in thin layers on earthenware dishes, and dry it with a gentle heat. When dry, it will separate from the dishes in scales.

Note.—The second formula is the best.

Med. Use.—Tonic. A very agreeable and fashionable chalybeate.

Dose.—Gr. v. to gr. viij.

Ferri ammonio-tartras. *Ammonio-tartrate of iron.*

Aikin.

Put three parts of clean iron filings into a dish, and add one part of tartaric acid, dissolved in as much boiling water as will cover the iron. Keep the mixture in a warm place for two or three days, frequently stirring it, and adding more water, to supply the place of that lost by evaporation. When chemical action has ceased, add solution of ammonia in slight excess, triturate the ingredients together, add a little more water, filter the solution, and evaporate it to dryness. Redissolve the dry mass in distilled water, add to it a little more ammonia, filter it, and evaporate the clear solution with the heat of a water-bath to a syrupy consistence, then spread it out on earthenware plates, and dry it at a gentle heat in a stove. When dry it will separate from the plates in scales.

Med. Use.—The same as the preceding.

Dose.—Gr. v. to gr. viij.

Ferri arsenias. *Arseniate of iron.*

Add a solution of arseniate of potash to a solution of sulphate of iron as long as any precipitate is formed. Collect, wash, and dry the precipitate.

Use. — It has been strongly recommended as a topical application, for destroying the vitality of cancerous formations. Mr. Carmichael has employed with success a mixture of ʒss of arseniate of iron and ʒij of phosphate of iron, mixed with water and applied very thin, with a camel's-hair pencil.

Ferri bromidum. *Bromide of iron.*

Put one part of clean iron filings into a stoppered bottle with three parts of water, then add one part of bromine. Close the bottle, and set it aside, shaking it occasionally, for several days. When the colour of the bromine has disappeared, filter the solution, and evaporate it to dryness.

Dose.—From one grain to three grains.

Ferri carbonas. *Carbonate of iron.*

Dubl. Ph. 1850.

℞ Sulphate of iron	℥viij.
Crystallized carbonate of soda of commerce	℥x.
Distilled water	Cij.

Dissolve each salt in one half of the water, and both solutions being raised to the boiling temperature, mix them, and set the whole to rest in a covered vessel for 6 hours. The supernatant solution having been drawn off with a syphon, the precipitate is to be drained on a calico filter, and then subjected to strong expression. Finally, let it be dried at a temperature not exceeding 212°, pulverized, and preserved in a well-stopped bottle.

Med. Use.—Tonic.

Dose.—From gr. iv. to gr. xxx. In tic doloreux ʒiv. have been given.

Ferri carbonas cum saccharo. *Carbonate of iron with sugar.*

Lond. Ph. 1851.

℞ Sulphate of iron	℥iv.
Carbonate of soda . . .	℥iv. ℥ij.
Sugar	℥ij.
Boiling distilled water . .	Oiv.

Dissolve the sulphate and carbonate separately in Oij of the water. Mix the solutions whilst yet hot together, and set aside that the carbonate may subside. Afterwards, the supernatant liquor being poured off, wash the precipitated carbonate often with water. Add the sugar dis-

solved in 2 fluidounces of the water to this, and evaporate the mixture in a water-bath, until the powder be dried. Preserve in a well-closed vessel.

Edin. Ph. 1841.

Ferri carbonas saccharatum. Saccharine carbonate of iron.

℞ Sulphate of iron	℥iv.
Carbonate of soda . . .	℥v.
Pure sugar	℥ij.
Water	Oiv.

Dissolve the sulphate and carbonate each in two pints of the water; add the solutions and mix them; collect the precipitate on a cloth filter, and immediately wash it with cold water; squeeze out as much of the water as possible, and without delay triturate the pulp which remains with the sugar previously in fine powder. Dry the mixture at a temperature not much above 120°.

Note.—Carbonate of the protoxide of iron in an undetermined state of combination with sugar and sesquioxide of iron. Colour, greyish green; easily soluble in muriatic acid, with brisk effervescence.

Dubl. Ph. 1850.

Ferri carbonas saccharatum.

℞ Sulphate of iron	℥viij.
Crystallized carbonate of soda	℥x.
Distilled water	Cij.
Refined sugar, in fine powder	℥iv.

With the sulphate of iron, carbonate of soda, and water, prepare as desired in the preceding formula (carbonate of iron) a carbonate of iron, and immediately after it has been expressed, mix with it the refined sugar. Dry the mixture at a temperature not exceeding 212°, and, having reduced it to a fine powder, preserve it in a well-stopped bottle.

Med. Use.—Given in all cases in which chalybeates in general are considered to be indicated; especially in chlorosis and amenorrhœa.

Dose.—From five to ten grains twice or thrice daily.

Ferri chloridum. *Chloride of iron. Protochloride of iron.*

Codex, Ph. Franç. 1839.

℞ Iron filings	100
Hydrochloric acid	q. s.

Put the acid into a matrass; add the filings in divided portions, until the acid will dissolve no more; boil the solution on an excess of the filings; allow a deposition to take place for some moments; decant the clear portion, and evaporate it rapidly to dryness.

Ferri perchloridum. *Perchloride of iron.*

Codex, Ph. Franç. 1839.

℞ Red oxide of iron	100
Hydrochloric acid	q. s.

Dissolve the oxide in the acid, evaporate the solution to dryness on a sand-bath; enclose the residue in well-stopped bottles.

Ferri citras. *Citrate of iron.*

℞ Crystallized citric acid. . .	℥iv.
Moist hydrated peroxide of iron recently precipitated, about	℥viij.
Distilled water	q. s.

Dissolve the citric acid in four times its weight of water, heat the solution to the boiling point, and add the oxide of iron until it is slightly in excess, then add a little more water to facilitate filtration, and filter the solution. Evaporate it by the heat of a water-bath, until reduced to a syrupy consistence; spread it out on earthenware dishes, and dry it with a gentle heat until it separates in scales.

Med. Use.—Tonic.

Dose.—gr. v. to gr. viij.

Ferri et quinæ citras. *Citrate of iron and quinine.*

℞ Citrate of iron	3 parts.
Citrate of quinine . . .	1 part.
Distilled water	10 parts.

Dissolve the salts in the water by a gentle heat, filter, if necessary, and evaporate over a water-bath to a consistence suitable for scaling on plates.

The citrate of quinine is prepared as follows:—

Citrate of Quinine.

Dissolve 1 part of sulphate of quinine in 40 parts of boiling distilled water, and pour into the solution, by degrees, while at a boiling temperature, solution of citrate of soda made sensibly acid, constantly stirring the mixture. At first the solution does not redden blue litmus paper, but further additions of the citrate of soda are made, until the litmus paper is slightly changed to red. The solution is now allowed to cool, and to remain at rest for several hours, when part of the citrate of quinine will be deposited in crystals. These are to be collected on a filter, washed with a small quantity of cold distilled water, slightly pressed between folds of filtering paper, and then dried in a warm closet. The mother-liquor and washings of the crystals may be concentrated by evaporation, and a further crop of crystals obtained.

The citrate of quinine thus obtained will be about equal in weight to the sulphate of quinine used in the process.

Med. Use.—Given in cases where a combination of these tonics is indicated.

Dose.—Gr. iij. to gr. vj.

Ferri et quinæ cyanidum. *Hydro-cyano-ferras quinicus. Cyanide of iron and quinine. Ferrocyanide of quinine.*

Codex, Ph. Franç. 1839.

℞ Disulphate of quinine . 100 parts.
Ferrocyanide of potassium 31 „
Distilled water . . . 2500 „

Boil them together for several minutes, the new salt which will be formed will float on the surface of the liquid. When the liquid has cooled, separate the salt and wash it with a little water. It may be purified by dissolving it in boiling alcohol, and allowing it to crystallize on cooling and spontaneous evaporation.

Ferri iodidum. *Iodide of iron.*

Edin. Ph. 1841.

℞ Any convenient quantity of iodine, iron-wire, and distilled water in the proportions for making solution of iodide of iron. Proceed as directed for that process, but before filtering the solution, concentrate it to one-sixth of its volume, without removing the excess of iron-wire. Put the filtered liquor quickly in an evaporating basin, along with twelve times its weight of quicklime around the basin, in some convenient apparatus in which it may be shut up accurately in a small space, not communicating with the general atmosphere. Heat the whole apparatus in a hot-air press, or otherwise, until the water be entirely evaporated; and preserve the dry iodide in small well-closed bottles.

Note.—A protiodide of iron. Entirely soluble in water, or nearly so, forming a greenish solution.

Dubl. Ph. 1850.

℞ Pure iodine . . . . . ℥j.
Filings, or thin turnings of wrought iron, separated from impurities by a magnet . . ℥ss.
Distilled water . . . . . ℥v.

Introduce the iodine, iron, and 4 ounces of the water, into a Florence flask, and, having heated the mixture gently for 10 minutes, boil until the solution loses its red colour. Pass the liquid now through paper into a second flask, washing the filter with the remaining ounce of water, and, by means of a regulated heat, boil down the liquor until a drop of it, taken out on the end of an iron wire, solidifies on cooling. When the flask has assumed the temperature of the air, let the iodide of iron be extracted from it (by breaking the flask if necessary), and, after it has been submitted to powerful pressure, enveloped in blotting paper, let it be enclosed in a well-stopped bottle.

Med. Use.—Stimulant to the glandular system, and also an excellent tonic in scrofula, chlorosis, amenorrhœa, &c.; in

secondary syphilis found useful when combined with a slight mercurial alterative.

Dose.—One grain to two grains.

Ferrum iodatum saccharatum. *Saccharine iodide of iron.*

Ph. Borussica, 1847.

℞ Iron powdered . . . . . ʒj.
Distilled water . . . . . ʒv.
Iodine . . . . . ʒss.

Add the iodine gradually, and apply a gentle heat, occasionally shaking the mixture until the red colour is changed to green. Filter it as quickly as possible, wash the filter with a little distilled water, and add to the liquor immediately

Sugar of milk, powdered . . ʒiss.

Evaporate the solution in a vapour bath, at a temperature from 104° to 122° Fahr., until of a tenacious consistence, then add,

Sugar of milk . . . . ʒj.

and reduce the mixture to powder.

Note.—Keep it carefully in a well-stopped vessel. It should be a yellowish-white powder, soluble in seven parts of water.

Six grains contain one grain of iodine.

Ferri lactas. *Lactate of iron.*

No. 1.

Digest iron filings in a weak solution of lactic acid, at a gentle heat, for 6 or 7 hours; filter the solution, and evaporate it, until, on cooling, crystals are deposited. These are to be collected, washed with spirit, and dried.

No. 2.

Dissolve 100 parts of lactate of lime in 500 parts of boiling water, and filter the solution. Then dissolve 68 parts of crystallized protosulphate of iron in 500 parts of water. Mix the two solutions; slightly acidulate the mixture with lactic acid, and heat it over a water-bath, with agitation, until the decomposition is complete. Filter the solution rapidly, to separate the sulphate of lime; add a small quantity of iron filings to the solution, and evaporate it to one-half; then filter it, and set it by to crystallize. More crystals may be obtained on further evaporation. The crystals are to be washed with a little spirit.

No. 3.

Ph. Suecica, 1845.

℞ Sugar of milk . . . . . ʒij.
Iron filings . . . . . ʒj.
Sour cows' milk . . . . ℔ij.

Put half the sugar of milk, together with the iron filings and cows' milk, into a bottle, to the mouth of which a cork is fitted, with a glass tube terminating in a capillary opening passing through it. Keep it for several days at a temperature between 80° and 100° Fahr., and when the sugar of milk has disappeared, add the remainder, and continue the process until crystals of lactate of iron have separated. It is now to be heated to the boiling point, and filtered into a bottle, which is to be immediately closed. When the crystals have subsided, they are to be collected, washed, and quickly dried.

Med. Use.—Administered in the same cases as the other mild preparations of this metal.

Dose.—Gr. vj. to gr. xij. in the twenty-four hours, in the form of lozenge or syrup.

Ferri malas impurus. *Impure malate of iron.*

Codex, Ph. Franç, 1839.

℞ Iron filings porphyrized. 100 parts.
Juice of sour apples . . 800 „

Digest during three days in an iron vessel at a temperature of 77° Fahr., evaporate to one half, strain the liquor through a linen cloth, and continue the evaporation on a sand-bath, until it is of the consistence of an extract. Preserve this medicine in a well-closed vessel.

Ferri oxydum. *Oxide of iron.*

Fe O.

This, the protoxide of iron, cannot be kept in contact with the air, as it rapidly passes to a higher state of oxidation.

Ferri oxidum nigrum. *Black oxide of iron.*

Edin. Ph. 1841.

℞ Sulphate of iron . .	℥vj.
Sulphuric acid (commercial)	fʒij & fℨij.
Pure nitric acid . .	fʒivss.
Stronger aqua ammoniæ	fʒivss.
Boiling water . . .	Oiij.

Dissolve half the sulphate in half the boiling water, and add the sulphuric acid; boil; add the nitric acid by degrees, boiling the liquid after each addition briskly for a few minutes. Dissolve the rest of the sulphate in the rest of the boiling water; mix thoroughly the two solutions; and immediately add the ammonia in a full stream, stirring the mixture at the same time briskly. Collect the black powder on a calico filter; wash it with water till the water is scarcely precipitated by solution of nitrate of baryta; and dry it at a temperature not exceeding 180°.

Note.—Dark grayish-black; strongly attracted by the magnet; heat expels water from it; muriatic acid dissolves it entirely, and ammonia precipitates a black powder from this solution.

Dubl. Ph. 1850. *Ferri oxydum magneticum.*

℞ Sulphate of iron	℥xij.
Solution of caustic potash .	℥liv.
Distilled water, a sufficient quantity.	

Convert, as is directed in the formula for *Ferri-Peroxydum Hydratum,* 8 ounces of the sulphate of iron into a persulphate.

To the solution thus obtained, add the 4 remaining ounces of the sulphate of iron, first dissolved in half a pint of distilled water. Mix well the resulting liquid with the solution of caustic potash, and, having boiled for 5 minutes in an iron vessel, collect the precipitate on a calico filter, and wash it with boiling distilled water until the liquid which passes through ceases to give a precipitate, when dropped into a solution of chloride of barium. Lastly, let the precipitate be dried by a steam or water heat, and, having been first reduced to a fine powder, let it be enclosed in a well-stopped bottle.

Dubl. Ph. 1826.

Let the scales of oxide of iron, which are to be found at the smith's anvils, be washed with water; and when dried, let them be detached from impurities by application of a magnet. Then let them be reduced to powder, of which let the most subtle parts be detached, according to the mode directed for the preparation of chalk.

Use.—The same as of the precipitated carbonate of iron.

SYNONYMES.

Magnetic Oxide of Iron. Martial Æthiops. Oxydum ferroso-ferricum.

Ferri sesquioxydum. *Sesquioxide of iron.*

Lond. Ph. 1851.

℞ Sulphate of iron . . .	℔iv.
Carbonate of soda . .	℔iv & ℥ij.
Boiling water. . . .	Cvj.

Dissolve the sulphate and carbonate separately in 3 gallons of the water. Mix the solutions together whilst yet hot, and set aside, that that which has been thrown down may subside. The supernatant liquor being poured off, wash this frequently with water; and dry.

Note.—It is dissolved in diluted hydrochloric acid, scarcely effervescing; and the same is thrown down by potash. The strained liquor is then destitute of colour, and is not coloured by hydrosulphuric acid or ferrocyanide of potassium being added.

Edin. Ph. 1841. *Ferri oxidum rubrum.*

℞ Sulphate of iron	℥iv.
Carbonate of soda	℥v.
Boiling water	Oss.
Cold water	Oiijss.

Dissolve the sulphate in the boiling water, add the cold water, and then the carbonate of soda previously dissolved in about thrice its weight of water. Collect the precipitate on a calico filter; wash it

with water till the water is but little affected with solution of baryta; and dry it in the hot-air press or over the vapour-bath.

Note.—Entirely soluble in muriatic acid, aided by gentle heat.

Dubl. Ph. 1850. *Ferri peroxydum.*

℞ Hydrated peroxide of iron any convenient quantity. Place it in an oven, on a few folds of filtering paper, and when it has become dry to the touch, transfer it to a covered crucible, and expose it for a few minutes to an obscure red heat.

Rouge Powder. Jewellers' plate-powder.

This is a finely-divided peroxide of iron, one of the best processes for the preparation of which is as follows:—

Into a solution of sulphate of iron, made with boiling water, and filtered, a concentrated solution of oxalic acid is poured until the yellow precipitate of oxalate of iron is no longer formed. When the liquor has cooled, and all deposition ceased, the precipitate is collected on a cloth and washed with hot water until the water ceases to afford an acid reaction.

The oxalate of iron, not yet perfectly dry, is, in the next place, heated on a plate of iron over a charcoal fire or a lamp. The decomposition of the salt commences at about 400° Fahr., and at a temperature a little higher than this the red oxide of iron is formed in a very finely-divided state.

SYNONYMES.

Colcothar. Caput mortuum vitrioli. Trip. Brown-red rouge. Crocus.

Ferrugo. *Hydrated sesquioxide of iron.*

Edin. Ph. 1841.

℞ Sulphate of iron	℥iv.
Sulphuric acid (commercial)	fʒiijss.
Nitric acid (D. 1380) . .	fʒix.
Stronger aqua ammoniæ .	fʒiijss.
Water	Oij.

Dissolve the sulphate in the water, add the sulphuric acid, and boil the solution; add then the nitric acid in small portions, boiling the liquid for a minute or two after each addition, until it acquires a yellowish-brown colour, and yields a precipitate of the same colour with ammonia. Filter; allow the liquid to cool; and add in a full stream the aqua ammoniæ, stirring the mixture briskly. Collect the precipitate on a calico filter; wash it with water till the washings cease to precipitate with nitrate of baryta; squeeze out the water as much as possible; and dry the precipitate at a temperature not exceeding 180°.

When this preparation is kept as an antidote for poisoning with arsenic, it is preferable to present it in the moist state, after being simply squeezed.

Note.—Entirely and very easily soluble in muriatic acid, without effervescence: if previously dried at 180°, a stronger heat drives off about 18 per cent. of water. The magnet does not attract it.

Dubl. Ph. 1850. *Ferri peroxydum hydratum.*

℞ Sulphate of iron . . .	℥viij.
Pure sulphuric acid . .	fʒvj.
„ Nitric acid . . .	fʒss.
Solution of caustic potash .	Oij.
Distilled water. . . .	℥xij.

To 10 ounces of the water add the sulphuric acid, and in the mixture, by the aid of heat, dissolve the sulphate of iron; mix the nitric acid with the remainder of the water, and, having added the diluted acid to the solution of sulphate of iron, concentrate by boiling, until, upon the sudden disengagement of much gas, the liquid passes from a dark to a red colour. Let this be now poured into the solution of caustic potash, and, when the mixture has been well stirred, place it on a calico filter, and let the precipitate be washed with distilled water until the liquid which passes through ceases to give a precipitate when dropped into a solution of chloride of barium. Lastly, enclose the precipitate

while in the pasty state, in a porcelain pot, whose lid is made air-tight by a luting of lard, so as to prevent the loss of water by evaporation.

Rubigo ferri. *Rust of iron.*

Dubl. Ph. 1826.

℞ Iron wire, any required quantity, which, moistened with water, is to be exposed to the air until it becomes corroded into rust. Then let it be rubbed in an iron mortar, and by the affusion of water, let the most subtle powder be washed off and dried.

SYNONYMES.

Crocus martis astringens.—Lond. Ph. 1721.

Chalybis rubigo præparatus.—Lond. Ph. 1746.

Ferri rubigo.—Lond. Ph. 1788.

Med. Use.—All these peroxides of iron are given as tonics in amenorrhœa, in rickets, in cancer, and in traumatic tetanus. The hydrated peroxide, prepared according to the directions given in the Edinburgh and Dublin Pharmacopœias, is used as an antidote for poisoning with arsenic, given in as large doses as the stomach will bear.

Dose.—Gr. j to gr. iv as a tonic; in traumatic tetanus, in the dose of from ʒij to ʒss every two hours. As an antidote for arsenic, a table-spoonful may be mixed with water, and administered, and this quantity repeated every five or ten minutes.

Ferri pernitras. *Pernitrate of iron.*

Liquor ferri persesquinitratis. *Solution of persesquinitrate of iron.*

Kerr.

℞ Iron filings, or wire	ʒiss.
Nitric acid	fʒiij.
Hydrochloric acid	ʒj.
Water	fʒxxvij.

Put the iron into a Wedgwood's dish, and pour over it the nitric acid diluted with ʒxv of the water; let them stand until chemical action has ceased, then decant the liquid from the remaining iron, and add to it the hydrochloric acid, and as much water as will make 30 oz. of the solution.

Dubl. Ph. 1850. *Ferri pernitratis liquor.*

℞ Fine iron wire, free from rust	ʒj.
Pure nitric acid	fʒiij.
Distilled water, a sufficient quantity.	

Into the acid, first diluted with 16 ounces of the water, introduce the iron wire, and leave them in contact until gas ceases to be disengaged. Filter the solution, and to it add as much water as will make its bulk one pint and a half.

The specific gravity of this solution is 1107.

Dose.—From ten to twenty drops in gruel or some other menstruum.

Ferri et manganesii carbonas saccharatum. *Saccharine carbonate of iron and Manganese.*

℞ Sulphate of iron	ʒiij ʒj.
Carbonate of soda	ʒv.
Sulphate of manganese	ʒj ℈j.
White sugar	ʒijss.

Dissolve the salts, separately, in the smallest practicable quantity of water, and mix the solutions. Collect the precipitate on a cloth filter, and immediately wash it with cold water; squeeze out as much of the water as possible, triturate the precipitate with the sugar previously reduced to a fine powder.

Dry at a temperature of about 120 Fahr.

Dose.—Five grains, gradually increased to a scruple, three times a day.

Ferri phosphas. *Phosphate of iron.*

U. S. Ph. 1850.

℞ Sulphate of iron	ʒv.
Phosphate of soda	ʒvj.
Water	cong. j.

Dissolve the sulphate of iron and phosphate of soda severally in 4 pints of water; then mix the solutions, and set the mixture by that the powder may subside. Lastly, having poured off the supernatant liquor, wash the phosphate of iron in hot water, and dry it with a gentle heat.

Note.—A dirty-blue powder, insoluble in water, soluble in diluted muriatic or nitric acid.

Use.—Employed as a topical application to cancerous ulcers; also internally in amenorrhœa, and some forms of dyspepsia.

Dose.—From 5 to 10 grains.

Ferri sesquiphosphas. *Sesquiphosphate of iron. Perphosphate of iron.*

Codex, Medic. Hamberg. 1845.

Add a solution of phosphate of soda to solution of perchloride of iron as long as any precipitate is formed. Collect, wash, and dry this precipitate.

Note.—A whitish powder, insoluble in water, soluble in dilute nitric acid. Becomes brown when strongly heated, and fuses into a greyish-black bead before the blow-pipe flame.

Use.—It has been recommended by Mr. Carmichael in doses of ℈j. two or three times a-day, in cancerous ulcerations and scirrhous tumours.

Liquor ferri superphosphatis. *Solution of acid phosphate of iron. Liquor Schobeltii.*

This solution is formed by dissolving perphosphate of iron in aqueous phosphoric acid to saturation. It has been used by Schobelt as an application to decayed teeth. Lint, moistened with about 20 drops of the solution, is introduced into the cavity of the tooth.

Ferri potassio-tartras. *Potassio-tartrate of iron.*

Lond. Ph. 1851.

℞ Sulphate of iron	℥iv.
Sulphuric acid	fʒss.
Nitric acid	fʒj.
Solution of ammonia	fʒx.
Powdered bitartrate of potash	℥ij.
Distilled water	Civ.

Dissolve the sulphate with the sulphuric acid in Oj. of the water; then, heat being applied, add gradually the nitric acid. Boil down the solution to the consistence of a syrup, and mix with the remaining water. Then add the ammonia to throw down the sesquioxide of iron. Wash this, and set aside for 24 hours. Then heat the bitartrate mixed with half-a-pint of the distilled water, to the 140th degree; and to it gradually add the moist sesquioxide, the supernatant water having been poured off. Separate that of this sesquioxide, which may not be dissolved, by a cloth: then evaporate the clear liquor until the salt may be dried.

It is allowable, however, to dry the potassio tartrate in the same manner as the ammonio citrate.

Note.—It is dissolved in water. This solution changes the colour neither of litmus nor turmeric; neither does it become blue on ferrocyanide of potassium being added; nor does it throw down anything on any alkali being added. But if it should have been heated with potash it throws down about 34 grains of sesquioxide of iron, from 100 grains.

Edin. Ph. 1841. *Ferrum tartarizatum.*

℞ Sulphate of iron	℥v.
Bitartrate of potash	℥v. & ʒj.
Carbonate of ammonia in fine powder	q. s.

Prepare the rust of iron from the sulphate as directed under Ferrugo, and without drying it, mix the pulpy mass with 4 pints of water; add the bitartrate, boil till the rust of iron is dissolved; let the solution cool; pour off the clear liquid, and add to this the carbonate of

ammonia so long as it occasions effervescence. Concentrate the liquid over the vapour-bath to the consistence of a thick extract, or till the residuum becomes, on cooling, a firm solid, which must be preserved in well-closed vessels.

Note.—Tartrate of potash and sesquioxide of iron. *Tartrate of iron.* Entirely soluble in cold water; taste, feebly chalybeate. The solution is not altered by aqua potassæ, and not precipitated by solution of ferrocyanide of potassium.

Dubl. Ph. 1850. *Ferrum tartarizatum.*

℞ Sulphate of iron . . . . ℥viij.
White bitartrate of potash . ℥v.
Distilled water. . . . . Oiss.

From the sulphate of iron prepare hydrated oxide of iron, by the process given in page 751. And having, immediately after it is washed, placed it with the bitartrate of potash and water in a porcelain capsule, apply heat to the mixture (taking care, however, that the temperature does not rise beyond 150°) and stir it occasionally for 6 hours. Let the solution, after it has cooled down to the temperature of the atmosphere, be decanted off any undissolved oxide of iron; and, having transferred it in small quantities to delf dinner-plates, let it be evaporated to dryness at a heat not exceeding 150°. Lastly, chip off the film of dry salt which adheres to the plates, and preserve it in well-stopped bottles.

Soubeiran's Trait. Pharm. *Potassio-tartrate of iron.*

℞ Cream of tartar . . . 1 part.
Distilled water. . . . 6 parts.
Moist hydrated peroxide of iron . . . . . q. s.

Digest them together, in a Wedgwood's dish, at a temperature from 120° to 140° Fahr., until no more oxide of iron is dissolved. Then filter and evaporate to dryness at a gentle heat; or, still better, evaporate to a syrupy consistence, spread it out on earthenware plates, and dry it at a gentle heat in a stove. When dry it will separate in scales.

SYNONYMES.

Ferrum tartarizatum.—Lond. Ph. 1788, 1800, 1824.

Tartras Potassæ et Ferri.—Edin. Ph. 1839.

Chalybeated Tartar.

Ferro-kali tartaricum. *Globuli tartari ferruginosi, seu martiati pulverati. Potassio-tartrate of iron.* Ph. Borussica, 1847.

℞ Iron filings. . . . . 1 part.
Crude tartar, powdered . 4 parts.

Mix, and moisten them with water in an earthen vessel, to form a paste; let them digest, frequently stirring the mixture, and occasionally adding more water to supply the loss by evaporation, until a black homogeneous mass is obtained, and a little dissolved in water forms a dark green solution. Set it aside in a warm place, and reduce the dry mass to powder. Keep it in a well-closed vessel.

Note.—The powder should be of a greyish-green colour.

Ferri sesquiferrocyanidum. *Sesqui-ferrocyanide of iron. Prussian blue. Berlin blue.*

No. 1.

Add solution of ferrocyanide of potassium (prussiate of potash) to a solution of a per-salt of iron, such as persulphate or perchloride, as long as a precipitate is formed, but carefully avoiding the addition of an excess of the precipitant. Collect, wash, and dry the precipitate.

No. 2.

℞ Sulphate of iron (green vitriol) . . . . . 6 parts.
Ferrocyanide of potassium . 6 parts.
Oil of vitriol . . . . 1 part.
Strong hydrochloric acid . 24 parts.
Chloride of lime (bleaching powder) . . . . 1 part.
Water . . . . . 110 parts.

Dissolve the sulphate of iron and ferrocyanide of potassium, each separately, in 15 parts of water; mix the solutions and add the oil of vitriol and hydrochloric acid, constantly stirring the mixture; let it stand for some hours, then add gradually a clear solution of the chloride of lime in 80 parts of water, taking care to stop the addition of this solution as soon as effervescence occurs from the liberation of chlorine. After some hours, collect, wash, and dry the precipitate.

Instead of adding the chloride of lime, the precipitate may be treated with dilute nitric acid, until it assumes a deep blue colour.

This is said to yield a very beautiful product.

The *Prussian blue* of commerce generally contains alumina and other foreign matters. See page 679.

Lond. Ph. 1836.

Note.—Ferri percyanidum. Percyanide of iron. It is pure if, after being boiled with dilute hydrochloric acid, ammonia throws down nothing from the filtered solution.

Turnbull's blue.

Add a solution of ferridcyanide of potassium (red prussiate of potash) to solution of protosulphate of iron as long as a deep blue precipitate is formed. Collect, wash, and dry this precipitate.

This product is considered by Liebig to have the same composition as ordinary *Prussian blue.*

Ferri sesquiferrocyanidum cum ferri oxydo. *Basic sesquiferrocyanide of iron. Soluble Prussian blue.*

Add a solution of protosulphate of iron to solution of ferrocyanide of potassium, as long as a bluish-white precipitate is thrown down. Collect this precipitate on a filter; expose it to the air until it assumes a deep blue colour; carefully wash it with distilled water, until the blue precipitate begins to dissolve in the water. It will now be soluble in pure water, although insoluble in saline solutions, and the solution will not be precipitated by the addition of spirit.

Ferri sesquiferrocyanidum cum potassii ferrocyanido. *Ferrocyanide of iron and potassium. Soluble Prussian blue.*

No. 1.

Add a solution of persulphate of iron to solution of ferrocyanide of potassium, keeping the latter always in excess. Collect the precipitate on a filter, and carefully wash it with distilled water, until the blue precipitate begins to dissolve in the water. It will now be soluble in pure water, although insoluble in saline solutions.

No. 2.

℞ Sulphate of iron . .	℥iv.
Sulphuric acid . . .	fʒiijss.
Nitric acid. . . .	fʒj or q. s.
Ferrocyanide of potassium	℥vj.
Water	Oiij.

Dissolve the sulphate of iron in 1 pint of water, add the sulphuric acid, and heat the mixture to the boiling point; then pour in the nitric acid in small quantities at a time, continuing the heat, until red fumes are no longer given off, and further additions of nitric acid cease to produce a dark colour in the solution. Allow the liquor to cool, dissolve the ferrocyanide of potassium in the remainder of the water, and mix the two solutions, adding the former to the latter. Collect the precipitate on a filter, and carefully wash it with distilled water, until the blue precipitate begins to dissolve in the water. It will now be soluble in pure water, although not in saline solutions.

This product is distinguished from the *Basic sesquiferrocyanide of iron*, by its being precipitated from its solution in water, on the addition of spirit. They may both be evaporated to dryness, without undergoing decomposition.

Ferri sulphas. *Sulphate of iron.*

Lond. Ph. 1851.

℞ Commercial sulphate of iron	℔iv.
Sulphuric acid	f℥j.
Iron drawn into wire . .	℥j.
Distilled water	Oiv.

Mix the acid with the water, and to these add the sulphate and iron; then apply heat, frequently stirring, until the sulphate may be dissolved. Strain the solution as yet hot, and set aside, that crystals may form. Evaporate the solution poured off, that it may crystallize again. Dry all these.

Edin. Ph. 1841.

If the sulphate of iron of commerce be not in transparent green crystals, without efflorescence, dissolve it in its own weight of boiling water acidulated with a little sulphuric acid; filter; and set the solution aside to crystallize. Preserve the crystals in well-closed bottles.

Note.—Pale bluish-green crystals, with little or no efflorescence.

Dubl. Ph. 1850.

℞ Iron wire, or turnings of wrought iron. . . .	℥iv.
Oil of vitriol of commerce .	f℥iv.
Distilled water	Oiss.

Pour the water on the iron placed in a porcelain capsule, add the oil of vitriol, and when the disengagement of gas has nearly ceased, boil for 10 minutes. Filter now through paper, and having separated the crystals which, after the lapse of 24 hours, will have been deposited from the solution, let them be dried upon blotting-paper placed on a porous brick, and then preserved in a well-stopped bottle.

Med. Use.—Tonic, in amenorrhœa—anthelmintic.

Dose.—From ½ a grain to 4 grains.

Impure sulphate of iron, such as is met with in commerce, under the names of *Copperas* or *Green vitriol*, is obtained on the large scale by the oxidation of native sulphuret of iron or pyrites. The sulphuret is roasted, and then exposed to the joint action of moisture and atmospheric air, under which circumstances the iron is converted into protoxide, and the sulphur into sulphuric acid, which combine to form the salt.

SYNONYMES.

Sal seu vitriolum martis.—Lond. Ph. 1721.

Sal martis.—Lond. Ph. 1746.

Ferrum vitriolatum.—Lond. Ph. 1788.

Green vitriol. Green Copperas. Salt of steel. Chalcanthum. Shoemaker's black.

Ferri sulphas granulatum. *Granulated sulphate of iron.*

Dubl. Ph. 1850.

℞ Iron wire, or turnings of wrought iron	℥iv.
Oil of vitiol of commerce .	f℥iv.
Distilled water	Oiss.
Rectified spirit	f℥x.

Pour the water on the iron placed in a porcelain capsule, add the oil of vitriol, and when the disengagement of gas has nearly ceased, boil for 10 minutes. Filter now through paper, into a vessel containing 8 ounces of the spirit, and stir the mixture as it cools, in order that the salt may be obtained in minute granular crystals. Let these, deprived by decantation and draining of the adhering liquid, be washed on a funnel or a small percolator, with the remainder of the spirit; and when rendered quite dry by repeated pressure between folds of filtering-paper, and subsequent exposure for 24 hours beneath a glass bell over a common dinner-plate half-filled with oil of vitriol, let them be preserved in a well-stopped bottle.

Ferri sulphas exsiccatum. *Dried sulphate of iron.*

Edin. Ph. 1841.

Expose any convenient quantity of sulphate of iron to a moderate heat in a porcelain or earthenware vessel not glazed with lead, till it is converted into a dry

grayish-white mass, which is to be reduced to powder.

Dubl. Ph. 1850. *Ferri sulphas siccatum.*

℞ Granulated sulphate of iron, any convenient quantity.

Expose the salt in a porcelain capsule to an oven heat not exceeding 400°, until aqueous vapours cease to be given off; and, having then reduced it to a fine powder, preserve it in a well-stopped bottle.

Med. Use.—The same as the crystallized salt.

Dose.—Gr. ss. to gr. iij.

Ferri persulphas. *Persulphate of iron.*

℞ Crystallized sulphate of iron	℥vj.
Oil of vitriol	gr. 518.
Nitric acid	f℥j. or q. s.
Water	Oj.

Dissolve the sulphate of iron in the water, and carefully add the oil of vitriol to the cold solution; then heat the mixture to the boiling point, and add the nitric acid in small quantities at a time, until the mixture ceases to be blackened by a further addition of it. Evaporate the solution to dryness.

Ferri et potassæ persulphas. *Persulphate of iron and potash. Iron alum. Iron alum with potash.* Fe^2O^3, 3 SO^3 + KO, SO^3 + 24 HO.

This salt has the same constitution as common alum; but the alumina of the latter is replaced by peroxide of iron. Salts having this constitution, of which there are several, are called alums.

℞ Crystallized sulphate of iron, in powder	℥x.
Nitrate of potash, in powder	℥iv.
Oil of vitriol	℥v.

Mix the ingredients in a porcelain dish, and apply heat until nitrous fumes cease to be evolved, and the mass becomes dry. Dissolve the product in 3 pints of boiling water. Filter the solution, and set it aside to crystallize.

It may also be made as follows:—

℞ Persulphate of iron	℥vj.
Sulphate of potash	℥iiss.
Water	Oj.

Dissolve the salts in the water with heat; filter the solution, and set it aside to crystallize.

Ferri et ammoniæ persulphas. *Persulphate of iron and ammonia. Iron alum with ammonia.* Fe^2O^3, 3 SO^3 + NH^4, O, SO^3 + 24 HO.

℞ Persulphate of iron	℥vj.
Sulphate of ammonia	℥iiss.
Water	Oj.

Dissolve the salts in the water with heat; filter the solution, and set it aside to crystallize.

Ferri sulphuretum. *Sulphuret of iron.*

Edin. Ph. 1841.

The best sulphuret of iron is made by heating an iron rod to a full white heat in a forge, and rubbing it with a roll of sulphur over a deep vessel filled with water to receive the fused globules of sulphuret which form. An inferior sort, good enough, however, for pharmaceutic purposes, is obtained by heating one part of sublimed sulphur and three of iron filings, in a crucible in a common fire till the mixture begins to glow, and then removing the crucible and covering it, until the action, which at first increases considerably, shall come to an end.

Note.—A protosulphuret of iron. Soluble in a great measure in diluted sulphuric acid, with effervescence and disengagement of sulphuretted hydrogen gas.

Dubl. Ph. 1850. *Ferri sulphuretum.*

℞ Rods of iron, of the size employed in

the manufacture of nails, any convenient number.

Having raised them to a strong red or white heat, apply them in succession by their heated extremities to sticks of sulphur, operating so that the melted sulphuret, as it is formed, may drop into a stone cistern filled with water, and be thus protected from oxidation. The water being poured off, let the product be separated from the sulphur with which it is mixed; and when dried let it be enclosed in a well-stopped bottle.

Ph. Suecica, 1845.

Roll sulphur is to be melted in a vessel, and stirred with a red-hot rod of iron, until it ceases to glow. Then another rod is to be used, and repeated until all the sulphur is consumed. When cold, the sulphuret is to be taken out, and kept in well-closed bottles.

Ferri protosulphuretum hydratum. *Hydrated protosulphuret of iron.*

Add hydrosulphuret of ammonia, or a solution of sulphuret of potassium, to solution of protosulphate of iron as long as a precipitate is formed. Collect the precipitate on a cloth filter, wash it quickly with hot water, squeeze out most of the water, and keep the sulphuret excluded from the air.

This has been recommended as an antidote against poisoning with corrosive sublimate.

Ferri persulphuretum hydratum. *Hydrated persulphuret of iron.*

Add a solution of persulphate of iron, gradually, to a solution of sulphuret of potassium, as long as any precipitate is formed. Collect, wash, and preserve the precipitate.

Bouchardat recommends this in preference to the protosulphuret as an antidote against poisoning with corrosive sublimate, arsenic, or the salts of lead or copper.

Ferri Valerianas. *Valerianate of iron.*

Dubl. Ph. 1850.

℞ Valerianate of soda .	℥v. and ʒiij.
Sulphate of iron . .	℥iv.
Distilled water . .	Oj.

Let the sulphate of iron be converted into a persulphate, as directed in the formula for Ferri peroxydum hydratum, and by the addition of distilled water, let the solution of the persulphate be augmented to the bulk of 8 ounces. Dissolve the valerianate of soda in 10 ounces of the water, then mix the two solutions cold, and, having placed the precipitate which forms, upon a filter, and washed it with the remainder of the water, let it be dried by placing it for some days rolled up in bibulous paper on a porous brick. This preparation should be kept in a well-stopped bottle.

Dose.—Half a grain to one grain, three times a-day.

Flux (from *fluo*, to flow).

In chemistry, this term is applied to substances employed to assist the fusion of refractory bodies, especially minerals.

Black flux.

The residue of the combustion of cream of tartar, consisting of carbonate of potash mixed with finely-divided charcoal.

Cornish reducing flux.

A mixture of ℥x of cream of tartar, ℥iijss of nitre, and ℥iij of borax.

Crude flux.

A mixture of 1 part of nitre and 2 of cream of tartar.

White flux.

Mix 1 part of cream of tartar with 2 parts of nitre, deflagrate the mixture, and reduce the product to powder.

Fly poison.

℞ Quassia chips	ʒij.
Water	Oj.
Treacle	℥iv.

Boil the quassia with the water for 10 minutes; then strain and add the treacle.

Flies will drink this with avidity, and are soon destroyed by it.

FOLIA SENNÆ SPIRITU VINI EXTRACTA. *Folia sennæ sine resina. Senna leaves exhausted with spirit of wine.*

Ph. Borussica, 1847.

Macerate the senna leaves for 2 days with 4 parts of rectified spirit of wine (sp. gr. 835), then press and dry them.

FOMENTUM TEREBINTHINATUM COMPOSITUM. *Compound turpentine fomentation.*

Ph. Castr. Ruthena, 1840.

℞ Oil of turpentine . . . . ʒj.
Yolks of two eggs.
Decoction of chamomile . . ℔j.
Spirit of camphor. . . . ʒij.
Mix.

FRENCH POLISH.

No. 1.

℞ Shellac . . . . . ʒxxij.
Rectified spirit . . . . Oiv.
Dissolve with a gentle heat.

No. 2.

℞ Shellac . . . . . ʒiv.
Frankincense . . . . . ʒss.
Rectified spirit, or naphtha . Oj.
Dissolve with a gentle heat.

FULIGOKALI.

Deschamps.

℞ Caustic potash . . . 20 parts.
Soot . . . . . 100 „
Distilled water . . . 200 „

Boil for an hour; dilute the decoction with more water; filter it, and evaporate the liquor to dryness. Preserve the dry powder in bottles.

SULPHURETTED FULIGOKALI.

℞ Fuligokali . . . . 60 parts.
Sulphur . . . . . 4 „
Caustic potash . . . 14 „

Fuse the sulphur and caustic potash together, dissolve the fused mass in a little water, then add the fuligokali, and evaporate the solution to dryness.

FULLER'S EARTH,

Is found in Bedfordshire, Berkshire, Hampshire, Surrey, and other parts of England. Its colour is greenish or yellowish-gray; it readily falls to powder when put into water; when exposed to a high heat it fuses into a brown slag. It consists of silica 53; alumina 10; red oxide of iron 9·75; magnesia 1·25; lime 0·5; water 24; and a trace of potash.

FUMIGATIO (from *fumigo*), to smoke, or to perfume. *Fumigation.*

The use of fumes, such as those of chlorine, nitric acid, vinegar, &c., for purifying apartments, clothing, furniture, &c., from miasmata or noxious effluvia.

FUMIGATIO AROMATICA. *Aromatic fumigation.*

℞ Olibanum,
Amber,
Mastic, āā. . . . . ʒiij
Styrax,
Benzoin, āā . . . . . ʒj.
Powder and mix. Sprinkle some of the powder over red-hot coals.

FUMIGATIO BALSAMICA. *Balsamic fumigation.*

Benzoin in ⅓ powder, either alone or mixed with styrax; used in the same way as the last.

FUMIGATIO CHLORINII. *Chlorine fumigation. Guyton's fumigation.*

Codex, Ph. Franç. 1839.

℞ Chloride of sodium, in powder . . . . 300 parts.
Binoxide of manganese . 100 „
Sulphuric acid (D. 1·847) 200 „
Common water . . . 200 „

Mix the chloride of sodium, oxide of manganese, and water, in a glass or earthenware capsule, and then add the sulphuric acid. Greenish-yellow vapours will soon be disengaged, which will become more copious if the mixture be shaken; for this purpose a glass tube or a porcelain rod should be employed.

The room in which the fumigation is made should be kept perfectly close, at least during half-an-hour.

The greatest possible care must be taken to avoid inhaling the vapours.

Fumigatio mercurialis. *Mercurial fumigation.*

Bouchardat.

℞ Vermilion	1½ part.
Olibanum, in powder	1 „

Mix.

Sprinkle the powder over red-hot coals, or a heated shovel.

Fumigatio acidi nitrici. *Nitric acid fumigation. Fumigation de Smyth.*

Codex, Ph. Franç. 1839.

℞ Sulphuric acid	64 parts.
Water	32 „
Purified nitre	64 „

Mix the acid and water in a porcelain capsule; place this over heated cinders, and throw into it, in small quantities at a time, the powdered nitre.

Dr. Carmichael Smith received 5000*l.* from the English government for the publication of the above formula.

Fumigatio picis liquidæ. *Tar fumigation.*

Put 1 part of tar and 4 or 5 parts of water into a pipkin or any convenient vessel, and boil it in the apartment of the patient, allowing the vapour to escape into the room.

Fusible metal.

No. 1.

℞ Bismuth	8 parts.
Lead	5 „
Tin	3 „

Fuse together.

No. 2.

℞ Lead	3 parts.
Tin	2 „
Bismuth	5 „

Fuse together.

No. 3.

℞ Bismuth	2 parts.
Lead	5 „
Tin	3 „

Fuse together.

No. 4.

℞ Bismuth	8 parts.
Lead	5 „
Tin	3 „
Mercury	1 „

Fuse together.

Garancine.

The colouring matter of madder mixed, with the carbonized residue resulting from the action of oil of vitriol on the woody fibre, &c., of the madder.

Macerate ℔ij of good madder in 5 or 6 times its weight of cold water for 10 or 12 hours, then press out the water; repeat this process 2 or 3 times. Having well pressed the madder from the last portion of water, mix the marc, still moist, with ℔j of oil of vitriol diluted with an equal volume of water, and used still hot; heat the mixture to 212°, and keep it at this temperature for an hour; then dilute it with water, throw it on to a linen strainer, well wash the semi-carbonized madder with cold water, and dry it.

Garancine is in the form of a brownish or puce-coloured powder. It is used in dyeing. It contains the colouring matter of the madder, unimpaired, as this is not destroyed by the action of the oil of vitriol.

Gargarisma. (From γαργαριζω, to wash the throat.) *A gargle.*

Any preparation used for washing the throat.

Gelatine.

The substances sold under this name are prepared from the skins, bones, and some of the tendons of animals, and pro-

bably, sometimes, from inferior kinds of isinglass. Sulphurous acid is sometimes used for decolorizing it.

GELATINA CORNU CERVI. *Hartshorn jelly.*

Codex, Ph. Franç. 1839.

℞ Hartshorn shavings	℥viij.
Water	Oiij.
White sugar	℥iv.

The juice of 1 lemon.

Wash the hartshorn; boil it in the water till reduced to one half; strain and press; add the sugar and lemon juice; clarify with white of egg; and reduce by boiling, to a gelatinizing consistence.

GELATINA CHONDRI. *Irish moss jelly.*

℞ Irish moss	℥j.
Water	Oij.

Boil it so as to form a jelly. It may be flavoured with lemon juice and spices, and sweetened with sugar.

GELATINA FUCI AMYLACEI. *Ceylon moss jelly.*

Made in the same way as the last.

GELATINA HELMINTHOCORTI. *Corsican moss jelly.*

℞ Corsican moss	℥j.
Water	Oij.
Isinglass	ʒij.

Boil to half a pint, then add,

White wine	℥j.
Sugar	℥ij.

Mix, and strain.

GELATINA ICHTHYOCOLLÆ. *Isinglass jelly.*

℞ Isinglass	℥j. or ℥iss.
Water	Oj.

Dissolve with heat, then add sugar to sweeten, and wine, &c., to flavour it.

GELATINA LICHENIS. *Iceland moss jelly.*

℞ Iceland moss	℥ij.
Isinglass	ʒj.
Sugar	℥iv.
Water	q. s.

Wash the Iceland moss two or three times in cold water; then boil it for an hour in enough water to yield Oss of decoction; strain and clarify the decoction, and dissolve the sugar and isinglass in it.

GELATINA LICHENIS SICCA. *Dry lichen jelly.*

Berzelius.

Deprive Iceland moss of its bitter principle by macerating it in a weak solution of potash; wash it with cold water to remove the alkali; then boil it in nine times its weight of water, until reduced to one-third; strain and press it; the liquor as it cools will gelatinize; lay this on a folded cloth, which will absorb much of the moisture, and the jelly will then easily separate; finally, dry it with a gentle heat. It will become black and brittle.

GELATINA PANIS. *Panada. Bread jelly.*

Cut a French roll into slices; toast them slightly on each side; boil them in a quart of water, until on cooling it forms a jelly; then flavour it with wine and cinnamon.

GELATINA MARANTÆ. *Arrow-root jelly.*

Mix ℥j of arrowroot with a little cold water into a smooth cream, then add about a pint of boiling water, boil it for a minute or two, and flavour it with wine and spice.

GEMS, ARTIFICIAL.

The artificial imitation of many of the precious stones has been carried to a high degree of perfection. The basis of these artificial gems is a fusible glass, called *paste* or *strass*, which is coloured with different metallic oxides or salts.

Paste or *strass.*

℞ Rock crystal	℥vj.
Red lead	℥ix. ʒij.
Pearlash	℥iij. gr. 180
Boracic acid	gr. 180
Arsenic	gr. v.

Mix and fuse in a Hessian crucible; keep it fused for 24 hours, then let it gradually cool.

Artificial amethyst.

No. 1.

℞ Paste . . . . . ℥xvj.
Oxide of mangan. gr. xv. to gr. xxiv.
Oxide of cobalt . . . . gr. j.
Fuse together.

No. 2.

℞ Paste . . . . . gr. 4608
Oxide of manganese . . gr. 36
Oxide of cobalt . . . gr. 24
Purple of cassius . . . gr. 1
Fuse together.

Artificial aventurine.

℞ Paste . . . . . 300 parts.
Protoxide of copper . . 40 „
Iron scales . . . . 80 „

Fuse the glass, and after the reduction of the copper let the mixture cool very slowly. The metallic copper will remain diffused through the glass in a crystalline form.

Artificial beryl.

℞ Paste. . . . . gr. 3456
Glass of antimony . . gr. 24
Oxide of cobalt . . . gr. 1½
Fuse together.

Artificial chrysolite.

℞ Paste . . . . . ℔v.
Calcined peroxide of iron . . ʒiij.
Fuse together.

Artificial cornelian.

Red.

℞ Paste . . . . . ℔ij.
Glass of antimony. . . . ℔j.
Calcined peroxide of iron . . ℥ij.
Oxide of manganese . . . ʒj.
Fuse together.

White.

℞ Paste . . . . . ℔ij.
Calcined bones . . . . ℥j.
Washed yellow ochre . . . ʒij.
Fuse together.

Artificial diamond.

Peroxide of tin fused at a very high heat.

Artificial emerald.

No. 1.

℞ Paste . . . . . gr. 9216
Acetate of copper . . gr. 72
Peroxide of iron . . . gr. 1½
Fuse together.

No. 2.

℞ Paste . . . . . ℥v.
Oxide of copper. . . . gr. 39
Oxide of chrome . . . gr. 2
Fuse together.

Artificial garnet.

No. 1.

℞ Paste . . . . . gr. 427
Glass of antimony . . . gr. 210
Oxide of antimony . . . gr. 2
Fuse together.

No. 2.

℞ Paste . . . . . gr. 512
Glass of antimony . . . gr. 256
Purple of cassius . . . gr. 2
Oxide of manganese . . gr. 2
Fuse together.

Artificial opal.

No. 1.

℞ Paste . . . . . ℔x.
Calcined bones . . . . ℔ss.
Fuse together.

No. 2.

℞ Paste . . . . . ℥j.
Horn silver . . . . gr. x.
Calcined bones . . . gr. xxvj.
Magnetic oxide of iron . gr. ij.
Fuse together.

Artificial ruby.

No. 1.

℞ Paste . . . . . ℥v.
Oxide of manganese . . . ʒj.
Fuse together.

No. 2.

℞ Paste . . . . . ʒxvj.
Purple of cassius,
Peroxide of iron,
Golden sulphuret of antimony,
Manganese calcined with nitre, āā . . . . gr. 168
Rock crystal . . . . ʒij.
Fuse together.

Artificial sapphire.

No. 1.

℞ Paste . . . . . gr. 4608
Oxide of cobalt . . . gr. 68
Fuse together for 30 hours.

No. 2.

℞ Paste . . . . . ʒviij.
Oxide of cobalt . . . . gr. 49
Oxide of manganese, a few grains.
Fuse together.

Artificial topaz.

No. 1.

℞ Paste . . . . . gr. 840
Glass of antimony . . . gr. 36
Purple of cassius . . . gr. 1
Fuse together.

No. 2.

℞ Paste . . . . . gr. 3456
Peroxide of iron . . . gr. 36
Fuse together.

German paste.

℞ Pea meal . . . . . ℔ij.
Sweet almonds, blanched . . ℔j.
Fresh butter . . . . . ʒiij.

Beat all up together, add a little honey and saffron, and pass it through a coarse sieve to granulate it. The yolks of 2 eggs are sometimes added; but with this addition it is considered too fattening for the birds. It will keep good for 6 months.

Use.—For feeding nightingales, larks, and other insectivorous birds.

Gingerbread.

No. 1.

℞ Fine flour . . . . . ℔j.
Treacle . . . . . ʒviij.
Carbonate of potash . . . ʒss.
Butter . . . . . ʒj.
℞ Powdered ginger . . . ʒiv.
„ cinnamon,
„ nutmeg,
„ allspice, āā . . ʒj.

Warm water, sufficient to form a dough. It will require to stand for several days, sometimes a fortnight, before it is fit for the oven, as the rising depends on the slow action of the acid in the treacle on the carbonate of potash.

No. 2.

℞ Fine flour . . . . . ℔j.
Carbonate of magnesia . . ʒij.
Treacle . . . . . ℔ss.
Moist sugar . . . . . ʒiij.
Tartaric acid . . . . . ʒj.
Butter . . . . . ʒij.
Ginger,
Cinnamon, āā . . . . ʒj.
Nutmeg . . . . . ʒj.

Mix into a paste with warm water; let it stand for *half an hour*, and then put it into the oven. This should not be kept longer than 2 or 3 hours, at farthest, before putting it into the oven.

Glaze, *for earthenware.*

No. 1.

For common ware.

℞ White lead . . . . 53 parts.
Cornish stone . . . 16 „
Ground flints . . . 36 „
Flint glass . . . . 4 „

Powder, and mix into a thin paste with water.

No. 2.

For metallic colours.

℞ White felspar, 26 parts fritted with
Soda . . . . . 6 parts.
Nitre . . . . . 2 „
Borax . . . . . 1 part.

℞ Of the above . . . 20 parts.
Felspar . . . . . 26 „
White lead . . . . 20 „
Ground flints . . . 6 „
Chalk . . . . . 4 „
Oxide of tin . . . . 1 part.

Mix into a thin paste with water.

No. 3.

℞	Flint glass	20 parts.
	Flints	6 ,,
	Nitre	2 ,,
	Borax	1 part.

Frit these together, then

℞	Of the above	12 parts.
	White lead	40 ,,
	Felspar	36 ,,
	Flints	8 ,,
	Flint glass	6 ,,

Powder, and mix into a thin paste with water.

No. 4.

For stone ware.

℞	Frit of glaze, No. 2 . .	13 parts.
	Red lead	50 ,,
	White lead	40 ,,
	Flints	12 ,,

Powder, and mix into a thin paste with water.

GLOBULI CONTRAYERVÆ. *Lapis contrayervæ. Contrayerva balls.*

℞	Prepared crabs' claws . .	℔j.
	Prepared red coral,	
	Prepared pearls, āā . .	ʒiij.
	Powdered contrayerva root	ʒxv.

Mix, and form into balls with mucilage of gum arabic.

GLOBULI GASCOIGNII. *Pulvis bezoardicus. Gascoign's balls. Bezoardic powder.*

℞	Prepared crabs' claws . .	℔j.
	Prepared pearls,	
	Prepared red coral, āā .	ʒiij.
	Oriental bezoar . . .	ʒiss.

Mix, and form into balls with mucilage of gum arabic.

GLYCERINA. *Glycerine.* ($C^6H^8O^6$).

A sweet syrupy substance, resulting from the decomposition of olive oil, or other fixed oils, in the process of saponification. It is most easily obtained in small quantity by evaporating the water used in making lead plaster. It is, however, very largely produced by soap-makers, and in the manufacture of the fatty acids used for making candles. It is employed as a topical application, for cutaneous diseases, for burns, and in poultices to prevent their becoming dry. It is also applicable for preventing pill-masses from becoming hard, and for other similar purposes.

GUNPOWDER.

An explosive composition, consisting of nitrate of potash, charcoal and sulphur, in the following proportions:—

℞	Nitrate of potash . .	75 parts.
	Charcoal	16 ,,
	Sulphur	9 ,,

The nitrate of potash should be pure, and the charcoal prepared from some light wood, such as dogwood or alder. The ingredients, previously reduced to fine powder, are moistened with water, and well mixed by grinding in a mill. The mass is then pressed into a compact cake, subsequently broken into pieces, and rubbed through sieves, to granulate it as required. When dried, and polished by agitation, it is fit for use.

GUTTA PERCHA.

A variety of caoutchouc or India-rubber, brought from Singapore. It is a white or dirty-pinkish-coloured opaque solid, having a specific gravity 0·979. It has a silky fibrous texture, and feels smooth or greasy between the fingers. It is imported in the form of thin layers, resembling clippings of white leather, and solid masses, which appear to be formed of many of the layers pressed and united together. At temperatures below 50° it is hard, very tough, and but slightly flexible. At from 50° to 70° it becomes more elastic. When forcibly extended it shows very little power of contraction, and it requires considerable force to extend it. In this respect it differs from common caoutchouc. At a temperature between 140° and 160°, it becomes soft and very plastic, and its tenacity is greatly diminished. In this state, pieces may be

joined together, or it may be moulded into any form, like soft wax. When submitted to destructive distillation it yields a volatile oil similar to that afforded by caoutchouc, with which it is identical in chemical composition.

The tree yielding *Gutta percha* has been recently described by Sir William Hooker, and named by him *Isonandra gutta*. It belongs to the nat. ord. *Sapotaceæ*.

HEMATITE. *Hæmatitis. Lapis Hæmatitis. Lapis sanguineus.*

A native reddish-brown peroxide of iron. It occurs abundantly in Cumberland.

HERBÆ PRO ENEMATE. *Herbs for glyster.*

℞ Mallow leaves . . . . 2 parts.
Chamomile flowers. . . 1 part.
Mix.

HERBÆ PRO FOTU. *Herbs for fomentation.*

℞ Southernwood leaves,
Tops of sea-wormwood,
Chamomile flowers, āā . 2 parts.
Bay leaves . . . . . 1 part.
Mix.

HERBÆ QUINQUE CAPILLARES. *Five capillary herbs.*

Hart's tongue,
Black maidenhair,
White maidenhair,
Golden maidenhair,
Spleen-wort.

HERBÆ QUINQUE EMOLLIENTES. *Five emollient herbs.*

Beet,
Mallow,
Marsh mallow,
French mercury,
Violet.

HIERA PICRA (From ιερος, holy, and πικρος, bitter.) *Pulvis aloes cum canella.*

Lond. Ph. 1746.

℞ Powdered socotrine aloes . ℔iv.
Powdered canella alba . . ℔j.
Mix.

It was at one time kept in the form of an electuary, called *Hiera logadii.*

HYDRARGYRUM. *Mercury. Symb.* Hg. *eq.* 200.

Metallic mercury is obtained from the sulphuret which is the principal ore of it. Specific gravity 13·56 at 60°. Boiling point 662°.

Lond. Ph. 1851.

Specific gravity 13·5. It escapes in vapours on the application of heat. The globules when gently propelled over a sheet of paper, do not adhere in the slightest degree to the paper.

Edin. Ph. 1841.

Entirely sublimed by heat: a globule moved along a sheet of paper leaves no trail: pure sulphuric acid agitated with it evaporates when heated without leaving any residuum.

HYDRARGYRUM PURUM. *Pure mercury.*

Dubl. Ph. 1850.

℞ Quicksilver of commerce . . ℔iij.
Pure muriatic acid . . . f℥ss.
Distilled water . . . . ℥ij.

Having introduced the silver into a small glass retort, over the body of which a hood of sheet-iron is supported, let the heat of a gas lamp be applied, until two-thirds of the metal has distilled over. Boil this for a few minutes with the acid and water, and having, by repeated affusion of distilled water, and decantation, removed the entire of the acid, let the metal be poured into a capsule, and dried by the application of heat.

HYDRARGYRUM CUM CRETA. *Mercury with chalk.*

Lond. Ph. 1851, & Edin. Ph. 1841.

℞ Mercury . . . . . ℥iij.
Prepared chalk . . . . ℥v.

Rub them together until globules are no longer visible.

Note.—Part is evaporated by heat; what remains, the tests being employed as before, corresponds to prepared chalk.

Dubl. Ph. 1850.

℞ Pure mercury. . . . . ℥j.
Prepared chalk . . . . ℥ij.

Rub the mercury and chalk in a porcelain mortar, until the metallic globules cease to be visible, and the mixture acquires a uniform gray colour.

SYNONYMES.

Grey powder. Alkalized mercury. Æthiops absorbens.

Hydrargyrum cum magnesia. *Mercury with magnesia.*

Dubl. Ph. 1850.

℞ Pure mercury. . . . . ℥j.
Carbonate of magnesia . . ℥ij.

The method of preparation is the same as for hydrargyrum cum cretâ.

Med. Use.—Given to children with disordered bowels, as an alterative.

Dose.—Gr. iij. to gr. iv.

Hydrargyri acetas. *Acetate of mercury.*

Dubl. Ph. 1826.

℞ Purified mercury,
Acetate of potash, āā. . 9 parts.
Diluted nitric acid . . 11 „
Boiling distilled water . 100 „
Distilled vinegar . . . q. s.

Let the nitric acid be added to the mercury, and when the effervescence has ceased, let the mixture be digested, that the metal may be dissolved; let the acetate of potash be dissolved in water, and let the distilled vinegar be added until the acid shall predominate in the liquor: to this, whilst boiling, let the solution of the mercury in the nitric acid be added, and let the mixture be filtered as quickly as possible through a double linen cloth; let it cool, that crystals may form; having washed them with cold distilled water, dry them on paper with a very gentle heat. In every step of this process let glass vessels be employed.

Use.—Employed as the active ingredient of Keyser's pills.

Dose.—Gr. j. to gr. iij.

Hydrargyri chloridum. *Chloride of mercury. Calomel.*

Lond. Ph. 1851.

℞ Mercury . . . . . ℔iv.
Sulphuric acid . . . . f℥xxiss.
Chloride of sodium. . . ℔iss.

Boil 2 pounds of the mercury with the acid, until the dry bipersulphate of mercury remains; rub this, when it has cooled, with 2 pounds of the mercury in an earthen mortar, so that they may be well mixed. Then add the chloride, and rub together, until globules can no longer be seen; then sublime. Rub the sublimate into a very fine powder, and carefully wash with distilled water, and dry.

Note.—Pulverulent, whitish, it is volatilized by heat. It grows black on potash being added, then heat being applied it unites into globules of mercury. Either nitrate of silver, or solution of lime, or hydrosulphuric acid being added, nothing is thrown down from the water in which it may have been washed or boiled.

Edin. Ph. 1841. *Calomelas.*

℞ Mercury . . . . ℥viij.
Sulphuric acid (commercial) . . . . f℥ij & f℥iij.
Pure nitric acid. . . f℥ss.
Muriate of soda . . ℥iij.

Mix the acids, add 4 ounces of the mercury, and dissolve it with the aid of a moderate heat. Raise the heat so as to obtain a dry salt. Triturate this with the muriate of soda and the rest of the mercury till the globules entirely disappear. Heat the mixture by means of a

sand-bath in a proper subliming apparatus. Reduce the sublimate to fine powder; wash the powder with boiling distilled water until the water ceases to precipitate with solution of iodide of potassium; and then dry it.

Note.—Heat sublimes it without any residuum; sulphuric ether agitated with it, filtered, and then evaporated to dryness, leaves no crystalline residuum, and what residuum may be left is not turned yellow by aqua potassæ.

Dublin Ph. 1850. *Calomelas.*

℞ Sulphate of mercury	℔x.
Mercury of commerce	℔vij.
Dried chloride of sodium	℔v.

Incorporate as completely as possible the sulphate and the metallic mercury by prolonged trituration, and, having then added the chloride of sodium, previously reduced to a fine powder, rub all well together until a perfectly equable mixture is obtained. Heat this, through the medium of sand, in a shallow iron pot with a flat bottom, lined with clay, and covered with a lid of cast-iron, until the sublimate which attaches itself to a circular plug in the centre of the lid (which admits of being removed and cleaned from time to time), neither exhibits minute globules of mercury, nor is rendered yellow by being touched with a solution of caustic potash. The whole being now permitted to cool down to the temperature of the air, the contents of the pot are to be transferred to a small hot hearth or oven, whose door is made tight by a clay lute, and a regulated heat is to be applied so as to cause the vaporized calomel to pass into an adjacent chamber of considerable size, on the floor of which it will accumulate in the form of a fine white powder.

Med. Use.—Purgative.

Dose.—From gr. ij. to gr. x. Alterative in doses of about gr. j. or gr. iss.

SYNONYMES.

Mercurius dulcis præcipitatus. Mercurius dulcis sublimatus. Calomelas.—Lond. Ph. 1721.

Hydrargyrus muriatus mitis.—Lond. Ph. 1788.

Hydrargyri submurias.—Lond. Ph. 1809, 1824.

Drago mitigatus. Aquila alba. Manna metallorum. Panchymagogum minerale. Calomel.

Hydrargyri bichloridum. *Bichloride of mercury.*

Lond. Ph. 1851.

℞ Mercury	℔ij.
Sulphuric acid	f ℥xxiss.
Chloride of sodium	℔iss.

Boil down the mercury with the acid, until the dry bipersulphate remains; rub this, when it has cooled, with the chloride in an earthen mortar; then sublime with a heat gradually increased.

Note.—Crystalline, it melts by heat, presently it is sublimed. It is dissolved in water, rectified spirit, and in ether. That which is thrown down from the water, on either potash or soda being added, or solution of lime, is red; or if added abundantly, it is yellow. Heat being applied, the precipitate evolves oxygen and unites into globules of mercury.

Edin. Ph. 1841. *Sublimatus corrosivus.*

℞ Mercury	℥iv.
Sulphuric acid (commercial)	f ℥ij. and f ℥iij.
Pure nitric acid	f ℥ss.
Muriate of soda	℥iij.

Mix the acids, add the mercury, dissolve it with the aid of a moderate heat, and then raise the heat so as to obtain a dry salt. Triturate this thoroughly with the muriate of soda, and sublime in a proper apparatus.

Note.—It sublimes entirely by heat; and its powder is entirely and easily soluble in sulphuric ether.

Dublin Ph. 1850. *Sublimatum corrosivum.*

℞ Sulphate of mercury	℔x.
Dried chloride of sodium	℔v.

Reduce each salt to a fine powder, and,

having mixed them carefully by trituration in a mortar, let the mixture be introduced into an iron pot lined with clay, and by a regulated heat, applied through the intervention of sand, let the corrosive sublimate be sublimed into an earthen head placed over the pot, and connected to it by means of lute. The product should be preserved in an opaque bottle.

Med. Use.—In secondary syphilis, and in some affections of the skin, as lepra.

Dose.—From one-eighth to one-fourth of a grain.

SYNONYMES.

Mercurius sublimatus corrosivus.—Lond. Ph. 1721. *Mercurius corrosivus albus.*—Lond. Ph. 1746.

Hydrargyrus muriatus. — Lond. Ph. 1788.

Hydrargyri oxymurias.—Lond. Ph. 1809–1824.

Murias Hydrargyri corrosivus.—Edin. Ph. 1839.

Acidum chloro-hydrargyricum. Corrosive sublimate.

Liquor hydrargyri bichloridi. *Solution of bichloride of mercury.*

Lond. Ph. 1851.

℞ Bichloride of mercury,
Hydrochlorate of ammonia,
āā gr. x.
Distilled water. . . . Oj.
Dissolve.

Use.—As an antisyphilitic, in the dose of from f℥ss to f℥ij in f℥ij of linseed infusion. Sometimes used externally as a wash in some cutaneous affections.

Hydrargyri ammonio-chloridum. *Ammonio-chloride of mercury*, or *White precipitated mercury.*

Lond. Ph. 1851. *Hydrargyri ammonio-chloridum.*

℞ Bichloride of mercury . . ℥vj.
Distilled water . . . . Ovj.
Solution of ammonia . . f ℥viij.
Dissolve the bichloride in the water, heat being applied. To this, when it has cooled, add the ammonia, frequently shaking. Wash the powder thrown down until it may be destitute of taste; lastly, dry.

Note.—Pulverulent, white, it is sublimed by heat. It is dissolved in hydrochloric acid without effervescence. Heated with potash it exhales ammonia, and assumes a yellow colour.

Edin. Ph. 1841. *Hydrargyri precipitatum album.*

℞ Corrosive sublimate . . ℥vj.
Distilled water . . . . Ovj.
Aqua ammoniæ . . . f ℥viij.
Dissolve the corrosive sublimate with the aid of heat in the distilled water; and when the solution is cold, add the aqua ammoniæ; stir the whole well; collect the powder on a calico filter, and wash it thoroughly with cold water.

Dubl. Ph. 1850. *Hydrargyri ammonio-chloridum.*

℞ Corrosive sublimate . . . ℥j.
Solution of ammonia . . f ℥ix.
Distilled water . . . . Oj.
Dissolve the corrosive sublimate in the water, with the aid of a gentle heat, pour the ammonia into the solution, and, having stirred the mixture well, collect the precipitate on a filter, and wash it with warm distilled water, until the liquid which passes through ceases to give a precipitate when dropped into an acid solution of nitrate of silver. Lastly, dry the product at a temperature not exceeding 212°.

Use.—Used sometimes in combination with lead, in the form of ointment, in the treatment of some cutaneous affections.

SYNONYMES.

Mercurius præcipitatus albus.—Lond. Ph. 1746.

Calx hydrargyri alba.—Lond. Ph. 1788.

Hydrargyrum præcipitatum album.—Lond. Ph. 1809, 1824.

White precipitate. Lemery's white precipitate. Cosmetic mercury. Ammoniated submuriate of mercury. Ammoniacal oxychloruret of mercury. Chloramide of mercury.

HYDRARGYRI ET AMMONII CHLORIDUM. *Chloride of mercury and ammonium. Sal alembroth.*

℞ Bichloride of mercury,
Hydrochlorate of ammonia, āā ℥j.
Mix intimately together.

The object in adding the sal ammoniac here, is to render the corrosive sublimate more soluble in water. The action of the latter is not otherwise altered.

HYDRARGYRI BICYANIDUM. *Bicyanide of mercury.*

Lond. Ph. 1836.

℞ Percyanide of iron	℥viij.
Binoxide of mercury	℥x.
Distilled water	Oiv.

Boil them together for half an hour and strain; evaporate the liquor that crystals may be formed; wash what remains frequently with boiling distilled water, and again evaporate the mixed liquor that crystals may be formed.

Bicyanide of mercury may be otherwise prepared by adding as much binoxide of mercury as will accurately saturate it, to hydrocyanic acid distilled from ferrocyanide of potassium with diluted sulphuric acid.

Note.—Transparent and totally soluble in water. The solution, when hydrochloric acid is added, emits hydrocyanic acid, which is known by its peculiar smell; and a glass moistened with the solution of nitrate of silver and placed over it, gives a deposit, which is dissolved by boiling nitric acid. By heat it emits cyanogen, and runs into globules of mercury.

Dubl. Ph. 1826. *Hydrargyri cyanuretum.*

℞ Cyanuret of iron	6 parts.
Nitric oxide of mercury	5 „
Distilled water	40 „

Let the cyanuret of iron and oxide of mercury be mixed, and then added to the water previously warmed. Boil the mixture with continual stirring during half an hour, and filter through bibulous paper. Let the residue be frequently washed with warm distilled water. Lastly, let the filtered liquor evaporate, and by its cooling let crystals form.

Med. Use.—Employed in the same cases, and *dose* as the bichloride of mercury.

HYDRARGYRI IODIDUM. *Iodide of mercury.*

Lond. Ph. 1851.

℞ Mercury	℥i.
Iodine	ʒv.
Alcohol	q. s.

Rub the mercury and iodine together, adding the alcohol gradually, until globules are no longer visible. Dry the powder immediately with a gentle heat, without the access of light, and keep in a well-stopped vessel.

Note.—When recently prepared, it is yellowish, and when heat is cautiously applied it sublimes in red crystals, which afterwards become yellow, and then by access of light they blacken. It is not soluble in chloride of sodium.

Dubl. Ph. 1850. *Hydrargyri iodidum viride.*

℞ Pure mercury	℥j.
Pure iodine	ʒv.
Rectified spirit, a sufficient quantity.	

Rub the mercury and iodine in a porcelain mortar, occasionally adding a few drops of the spirit, until metallic globules are no longer visible, and the whole assumes a yellowish-green colour. Dry the residue at a temperature not exceeding 100°, in a dark room, and preserve it in a bottle impervious to light.

Med. Use.—Alterative in scrofula.

Dose.—Gr. one-eighth to gr. one-half, in pills.

HYDRARGYRI BINIODIDUM. *Biniodide of mercury.*

Lond. Ph. 1386.

℞ Mercury . . . . . ℥i.
Iodine . . . . . ℥x.
Alcohol . . . . . q. s.

Rub the mercury and iodine together, adding the alcohol gradually, until globules are no longer visible. Dry the powder with a gentle heat, and keep it in a well-stopped vessel.

Note.—By heat continually applied it is sublimed in scales, which soon become yellow, and afterwards, when they are cold, red. It is partially soluble in boiling rectified spirit, which affords crystals as it cools. It is alternately dissolved and precipitated by iodide of potassium and bichloride of mercury. It is totally soluble in chloride of sodium.

Edin. Ph. 1841.

℞ Mercury . . . . . ℥ij.
Iodine . . . . . ℥iiss.
Concentrated solution of muriate of soda . . . cong. j.

Triturate the mercury and iodine together, adding occasionally a little rectified spirit, till a uniform red powder be obtained. Reduce the product to fine powder, and dissolve it in the solution of muriate of soda with the aid of brisk ebullition. Filter, if necessary, through calico, keeping the funnel hot; wash and dry the crystals which form on cooling.

Note.—Entirely vaporizable; soluble entirely in forty parts of a concentrated solution of muriate of soda at 212°, and again deposited in fine red crystals on cooling.

Dubl. Ph. 1850 *Hydrargyri iodidum rubrum.*

℞ Corrosive sublimate . . . ℥j.
Iodide of potassium . . . ℥x.
Distilled water . . . . Oij,
Or as much as is sufficient.

Dissolve the corrosive sublimate with the aid of heat, in 25 ounces, and the iodide of potassium in 5 ounces of the water, and, when both solutions are cold, mix them. Decant the supernatant liquor when the precipitate has subsided; and, having collected this latter upon a paper filter, wash it with the remainder of the water. Finally, dry the product at a temperature not exceeding 212°, and preserve it in a close bottle.

Med. Use.—Alterative.

Dose.—Gr. one-twelfth, to gr. one-quarter, in pill with crumb of bread.

Hydrargyri iodo-chloridum. *Iodo-chloride of mercury. Iodhydrargyrate of chloride of mercury.*

Boutigny.

Suspend crystals of calomel in a stoppered bottle, at the bottom of which is put some iodine. After some time, the calomel will assume a red colour without any alteration taking place in its crystalline form. The iodine vapour appears to combine with the salt, but the precise nature of the resulting compound has not been determined.

Hydrargyri iodo-bichloridum. *Iodo-bichloride of mercury. Iodhydrargyrate of perchloride of mercury.*

Caventou.

℞ Bichloride of mercury,
Biniodide of mercury, āā . p. æ.

Dissolve the bichloride of mercury in rectified spirit, then add the biniodide, and having completed the solution, evaporate it to dryness. The product is said not to be a perfect double salt. It has been recommended by M. Récamier as more active than either of its constituents, in removing tumours, &c. It is used in the form of ointment.

Hydrargyri et potassii iodidum. *Iodide of mercury and potassium. Iodo-hydrargyrate of potassium. Iodhydrargyrate of iodide of potassium.*

Boullay.

℞ Biniodide of mercury,
Iodide of potassium, āā . . p. æ.

Dissolve in water, and evaporate to dryness; the product is an uncrystallizable salt.

Puche.

℞ Biniodide of mercury,
Iodide of potassium, āā . . p. æ.
Mix the salts together in a mortar.

Dr. Channing.

℞ Iodide of potassium . . gr. iijss.
Biniodide of mercury . . gr. ivss.
Distilled water. . . . f ℥j.

Dissolve, first the iodide of potassium, and then the biniodide of mercury in the water.

Dose.—From two to five drops of Dr. Channing's solution three times a-day, in chronic bronchitis, hooping-cough, tonsillitis, and some cutaneous diseases.

Hydrargyri et potassii iodocyanidum. *Hydrargyro-iodocyanide of potassium.*

Dr. Geogegan.

To a solution of iodide of potassium in water, add a concentrated solution of bicyanide of mercury; the double salt in the form of white pearly crystalline plates will be immediately deposited.

Use.—This salt is used as a test of the purity of hydrocyanic acid, which when pure has no action upon it, but if there be any mineral acid present, it will decompose the salt, giving rise to the formation of red biniodide of mercury, which is distinguished by its colour.

Hydrargyri nitratis acidum. *Acid nitrate of mercury.*

Dr. H. Bennet.

℞ Mercury . . . . . 4 parts.
Nitric acid . . . . . 8 „

Introduce the ingredients into a retort, and when solution is effected, reduce the quantity, by evaporation, to nine parts.

The preparation thus made is a dense solution of pernitrate of mercury in excess of nitric acid. It is used as a fluid caustic.

Hydrargyri oxydum. *Oxide of mercury.*

Lond. Ph. 1836.

℞ Chloride of mercury . . ℥j.
Lime water . . . . cong. j.

Mix and frequently shake them. Set by, and when the oxide has subsided, pour off the liquor. Lastly, wash it in distilled water until nothing alkaline can be perceived, and dry it, wrapped in bibulous paper, in the air.

Note.—Digested for a short time with diluted hydrochloric acid, and strained, neither solution of potash nor oxalate of ammonia throws down anything. It is totally soluble in acetic acid. By heat it is entirely dissipated.

Dubl. Ph. 1826. *Hydrargyri oxydum nigrum.*

℞ Sublimed calomel . . . 1 part.
Water of caustic potash,
made warm . . . . . 4 part.

Let them be triturated together until an oxide of a black colour is obtained, and let this be frequently washed with water. Lastly, let the oxide be dried with a *medium* heat on bibulous paper.

Med. Use.—Alterative.

Dose.—Gr. i. to gr. iij. in the form of pill.

SYNONYMES.

Hydrargyri oxydum cinereum.—Lond. Ph. 1809, 1824.

Hydrargyri binoxidum. *Binoxide of mercury.*

Lond. Ph. 1836.

℞ Bichloride of mercury . ℥iv.
Solution of potash . . f ℥xxviij.
Distilled water . . . Ovj.

Dissolve the bichloride of mercury in the water; strain and add the solution of potash. The liquor being poured off, wash, in distilled water, the powder thrown down, until nothing alkaline can be perceived, and dry it with a gentle heat.

Note.—On the application of heat it yields oxygen, and the mercury either runs

into globules or is totally dissipated. It is entirely soluble in hydrochloric acid.

Lond. Ph. 1851. *Hydrargyri nitrico-oxydum.*

℞ Mercury . . . . . ℔iij.
Nitric acid . . . . . fʒxviij.
Distilled water. . . . Oj.

Mix, and apply a gentle heat, until the mercury may be dissolved. Boil down the solution, and rub that which remains into powder. Place this into a very shallow vessel, then apply a slow fire, and gradually increase it, until red vapour shall have ceased to come off.

Note.—It consists of red shining crystalline scales. It is volatilized by a sharp heat, it evolves no nitric vapours. It is dissolved in hydrochloric and nitric acid.

Edin. Ph. 1841. *Hydrargyri oxydum rubrum.*

℞ Mercury . . . . . ʒviij.
Diluted nitric acid (D. 1280), fʒv.

Dissolve half of the mercury in the acid with the aid of a moderate heat; and continue the heat till a dry salt is formed. Triturate the rest of the mercury with the salt till a fine uniform powder be obtained; heat the powder in a porcelain vessel and constantly stir it, till acid fumes cease to be discharged.

Note.—This is a binoxide of mercury, called also *red precipitate*. Entirely soluble in muriatic acid: heat decomposes and sublimes it entirely in metallic globules, without any discharge of nitrous fumes.

Dubl. Ph. 1850.

℞ Pure mercury . . . . ʒviij.
Pure nitric acid . . . fʒiij.
Distilled water. . . . ʒvj,

In the acid, diluted with the water, digest the mercury, using at first a very gentle heat, but, when the action has ceased, finally boiling for a few minutes, and, having decanted the solution, evaporate to dryness. Let the residuum, first reduced to powder, be transferred to a shallow cast-iron pot with a flat bottom, and loosely covered by a fire-tile lid; and in this let it be exposed to the heat of a slow fire, until red vapours cease to be given off. The heat must now be withdrawn, and when the pot has cooled, its contents should be transferred to bottles.

SYNONYMES.

Mercurius calcinatus.—Lond. Ph. 1746.

Hydrargyrus calcinatus.—Lond. Ph. 1788.

Hydrargyrum calcinatum.

Mercurius præcipitatus corrosivus.—Lond. Ph. 1721.

Mercurius corrosivus ruber.—Lond. Ph. 1746.

Hydrargyri nitratus ruber.—Lond. Ph. 1788.

Oxydum Hydrargyri rubri per acido nitrico.—Edin. Ph. 1839.

Red precipitate. Coagulated mercury.

Hydrargyrum oxydulatum nigrum. *Mercurius solubilis Hahnemanni. Hydrargyri præcipitatum nigrum. Hahnemann's black oxide of mercury.*

Ph. Borussica, 1847.

℞ Solution of nitrate of mercury, recently prepared, (sp. gr. 1·100) ʒix. ʒij.
Distilled water . . . ℔ij. ʒiv.
Caustic solution of ammonia (sp. gr. 960) . ʒss.

Dilute the solution of nitrate of mercury with ℔ij of the water, and the solution of ammonia with the remainder, and mix the solutions. Place the precipitate immediately on a filter, wash it with five ounces of distilled water, and press it between bibulous paper. Dry it in a dark place, avoiding heat, and when powdered preserve it carefully in a dark stoppered bottle.

Note.—It should be a very black powder.

Hydrargyri oxydum sulphuricum. *Sulphuric oxide of mercury. Turpith mineral. Hydrargyri subsulphas.*

Dubl. Ph. 1826.

℞ Persulphate of mercury . 1 part.
Warm water . . . . 20 parts.

Triturate them together in an earthenware mortar, and pour off the supernatant liquor; let the yellow powder be washed with distilled water, so long as the decanted fluid exhibits any deposit on the addition of some drops of the water of caustic potash. Lastly, let the sulphuric oxide of mercury be dried.

Med. Use.—This preparation was formerly employed as an emetic, but is now only used as an errhine, to produce a discharge from the nostrils in chronic ophthalmia, incipient hydrocephalus, cephalalgia, &c., 1 grain, mixed with 4 or 5 of some bland powder, is snuffed up the nostrils at bedtime, or in the morning.

It is frequently administered to dogs as an emetic, in doses of 3 to 5 grains.

Hydrargyri phosphas. *Hydrargyrum oxydulatum phosphoricum. Phosphate of mercury.*

Ph. Badensia, 1841.

To a solution of nitrate of mercury slightly acidulated with nitric acid, add solution of phosphate of soda as long as any precipitate is formed. Collect, wash, and dry the precipitate.

Note.—A white, heavy, and almost tasteless powder, nearly insoluble in water. It fuses at a high temperature. When rubbed with caustic potash it becomes black.

Hydrargyrum stibiato-sulphuretum. *Sulphuretum hydrargyri et Stibii. Æthiops antimonialis.*

Codex, Medic. Hamberg. 1845.

℞ Powdered sulphuret of antimony . . . . . ℥iij.
Quicksilver . . . . . ℥j.
Washed flowers of sulphur . ℥j.

Rub them in a warm stone mortar, with the addition of a little water or sulphuret of ammonium, until globules of mercury are no longer perceptible.

The same formula is given in the Ph. Austr. 1836; Ph. Saxonica, 1837, and Ph. Castr. Ruthena, 1840.

Hydrargyri Sulphas. *Sulphate of mercury.*

Dubl. Ph. 1850.

℞ Quicksilver of commerce. . ℥x.
Oil of vitriol of commerce . f℥vj.

Place the quicksilver and oil of vitriol in a porcelain capsule, and apply heat until effervescence ceases, and nothing remains but a white and dry crystalline salt.

Use.—For making the bichloride of mercury.

Hydrargyri sulphuretum cum sulphure. *Sulphuret of mercury with sulphur. Ethiop's mineral.*

Lond. Ph. 1836.

℞ Mercury,
Sulphur, āā . . . . . ℔j.

Rub them together until globules are no longer visible.

Note.—Totally evaporates by heat, no charcoal or phosphate of lime being left.

Dubl. Ph. 1826. *Hydrargyri sulphuretum nigrum.*

℞ Purified mercury,
Sublimed sulphur, āā . . 1 part.

Rub them together in a stone-ware mortar, until the globules shall have disappeared.

Med. Use.—Alterative.

Dose.—Gr. v. to gr. xxx.

SYNONYMES.

Hydrargyrus cum sulphure.—Lond. Ph. 1788.

Hydrargyri sulphuretum nigrum.—Lond. Ph. 1824.

Hydrargyri bisulphuretum. *Bisulphuret of mercury.*

Lond. Ph. 1851.

℞ Mercury . . . . . ℔ij.
Sulphur . . . . . ℥v.

Mix the mercury with the sulphur melted over the fire, and when the mass first begins to swell up, remove the vessel from the fire, and cover it strongly, lest inflammation may ensue; afterwards, rub into powder and sublime.

Note.—It is volatilized by heat; and potash being added to it, it unites into globules.

Edin. Ph. 1841. *Cinnabaris.*

℞ Mercury . . . . . ℔ij.
Sulphur . . . . . ℥v.

Melt the sulphur, add the mercury, and continue the heat till the mixture begins to swell up; then remove the vessel, and cover it closely to prevent the mixture taking fire. When the material is cold, reduce it to powder, and sublime it.

Note.—It is sublimed entirely by heat, and without any metallic globules being formed.

Use.—Alterative and deobstruent. Seldom prescribed.

SYNONYMES.

Cinnabaris factitia.—Lond. Ph. 1746.

Hydrargyrus sulphuretus ruber.—Lond. Ph. 1788.

Hydrargyri sulphuretum rubrum.—Lond. Ph. 1809, 1824.

Vermilion.

Cinnabar of antimony.

Hydrargyri tartras. *Tartrate of mercury.*

Dissolve protonitrate of mercury in water slightly acidulated with nitric acid, and add to it solution of tartrate of potash as long as any precipitate is formed.

Indian yellow. *Purree.*

A yellow pigment brought from India, used in oil and water-colour painting. Differences of opinion exist as to its origin. It has been said to be obtained from camel's urine, from elephant's urine, from the gall-bladder of a species of ox, as well as from other sources, both animal and vegetable. It has been examined by Erdmann and by Stenhouse, who have obtained from it an acid, called by the former *euxanthinic acid*, by the latter *purreic acid.*

Indigo. *Pigmentum Indicum.*

This valuable pigment is obtained from several plants which grow in the East and West Indies, in the middle regions of America, in Africa, and in some parts of Europe.

Two methods are adopted for obtaining the indigo from the plants:—1. By the fermentation of the fresh leaves and stems. 2. By the maceration of the dried leaves.

No. 1.

The fermentation of the fresh leaves.

The cuttings of the plants are put into large vats together with sufficient water to cover them. Fermentation soon commences, which is allowed to continue from 12 to 24 hours, at a temperature about 85° Fahr. The liquor is then drawn off into another vat, in which it is agitated with flat sticks or paddle-wheels, until, from exposure to the air, the indigo separates from the liquor and assumes the proper colour. It is then allowed to deposit, and the liquor decanted off.

No. 2.

Extraction of indigo from the dried leaves.

The ripe plant being cut, is well dried in the sunshine; it is then threshed to separate the leaves from the stems. The dry leaves are stored in magazines, where they undergo an important change in about 4 weeks. When first dried they have a fine green colour, but this changes to a pale blue-gray. Previously to this change they yield very little indigo on maceration, but after the change they yield a great deal. The leaves are now macerated in a vat with 5 or 6 times their bulk of water for about two hours, being constantly stirred during this time. The liquor is then drawn off into another vat, and the process continued as in the previous case.

INFUSUM ANTHEMIDIS. *Infusion of chamomile.*

Lond. Ph. 1851, & Edin. Ph. 1841.

℞ Chamomile	ʒv.
Distilled water, boiling	Oj.

Macerate for 10 minutes, in a closed vessel, and strain.—*Lond.*

Infuse for 20 minutes in a covered vessel, and then strain.—*Edin.*

Dubl. Ph. 1850.

℞ Chamomile flowers, dried	℥ss.
Boiling water	℥xij.

Infuse for 15 minutes in a covered vessel, and strain. The product should measure about 8 ounces.

Med. Use.—Stomachic and tonic: the infusion made with cold water is said to be more grateful than that made with hot. This infusion, when taken warm, is very effectual in promoting the action of emetics.

Dose.—℥j to ℥ij.

INFUSUM ARMORACIÆ COMPOSITUM. *Compound infusion of horse-radish.*

Lond. Ph. 1851.

℞ Sliced horseradish,	
Bruised mustard, of each	℥j.
Compound spirit of horseradish	f℥j.
Boiling distilled water	Oj.

Macerate the horseradish and mustard in the water for 2 hours in a closed vessel, and strain; then add the spirit.

Med. Use.—Stimulant, diuretic, and given in paralysis and in dropsies after intermittents.

Dose.—1 or 2 ounces.

INFUSUM ARNICÆ. *Infusion of arnica.*

Ph. Castr. Austr. 1841.

℞ Arnica flowers	ʒj.
Boiling water	q. s.

Macerate in a close vessel for 15 minutes, and strain to make ℥vj.

INFUSUM ARNICÆ FLORUM. *Infusion of arnica flowers.*

Ph. Castr. Ruthena, 1840.

℞ Arnica flowers	℥ss.
Boiling water	℔j.

Macerate in a close vessel for 1 hour, and strain.

INFUSUM ARNICÆ RADICIS. *Infusion of arnica root.*

Ph. Castr. Ruthena, 1840.

℞ Arnica root	℈ij.
Boiling water	℔j.

Macerate in a close vessel for 1 hour, and strain.

INFUSUM AURANTII COMPOSITUM. *Compound infusion of orange [peel].* Lond. & Dubl. *Infusum auruntii.* Edin.

Lond. Ph. 1851, and Edin. Ph. 1841.

℞ Orange-peel, dried	℥ss.
Lemon-peel, fresh	ʒij.
Cloves, bruised	ʒj.
Distilled water, boiling	Oj.

Macerate for a quarter of an hour, in a closed vessel, and strain.

Dubl. Ph. 1850.

℞ Bitter orange-peel, dried	ʒiij.
Cloves, bruised	ʒss.
Boiling water	Oss.

Infuse for half an hour in a covered vessel, and strain. The product should measure about 8 ounces.

Med. Use.—Stomachic.

Dose.—f℥j to f℥ij.

INFUSUM BUCHU. *Infusion of buchu. Infusum diosmæ,* Ph. 1836.

Lond. Ph. 1851.

℞ Buchu	℥j.
Boiling distilled water	Oj.

Macerate for 4 hours in a closed vessel, and strain.

Edin. Ph. 1841.

℞ Buchu. . . . . ℥j.
Boiling water . . . . . Oj.

Infuse for 2 hours in a covered vessel, and strain through linen or calico.

Dubl. Ph. 1850.

℞ Buchu leaves, bruised. . . ℥ss.
Boiling water . . . . . Oss.

Infuse for 1 hour in a covered vessel, and strain. The product should measure about 8 ounces.

Infusum calumbæ. *Infusion of calumba.*

Lond. Ph. 1851.

℞ Calumba, sliced . . . . ℥v.
Distilled water, boiling . . Oj.

Macerate for 2 hours in a closed vessel, and strain.

Edin. Ph. 1841.

℞ Calumba, in coarse powder . ℥ss.
Cold water, about a pint.

Triturate the calumba with a little of the water, so as to moisten it thoroughly; put it into a percolator, and transmit cold water, till 16 fluid ounces of infusion be obtained.

Dubl. Ph. 1850.

℞ Calumba root, in coarse powder ℥iij.
Cold water . . . . . ℥ix.

Macerate for 2 hours, and strain. The product should measure about 8 ounces.

Med. Use.—Stomachic and tonic.

Dose.—f℥iss to f℥ij.

Infusum caryophilli. *Infusion of clove.*

Lond. Ph. 1851, and Edin. Ph. 1841.

℞ Cloves, bruised . . . . ℥iij.
Distilled water, boiling . . Oj.

Macerate for 2 hours in a closed vessel, and strain.

Dublin. Ph. 1850.

℞ Cloves, bruised . . . . ℥ij.
Boiling water . . . . . ℥ix.

Infuse for 1 hour in a covered vessel, and strain. The product should measure about 8 ounces.

Med. Use.—A warm stomachic, and useful in flatulent cholic, chronic gout, and dyspepsia.

Dose.—From ℥j to ℥ij.

Infusum cascarillæ. *Infusion of cascarilla.*

Lond. Ph. 1851, and Edin. Ph. 1841.

℞ Cascarilla, bruised . . . ℥iss.
Distilled water, boiling . . Oj.

Macerate for 2 hours in a closed vessel, and strain.

Dubl. Ph. 1850.

℞ Cascarilla bark, in coarse powder ℥j.
Boiling water . . . . . Oss.

Infuse for 1 hour in a covered vessel, and strain. The product should measure about 8 ounces.

Med. Use.—A light bitter tonic in cases of dyspepsia.

Dose.—f℥j to f℥iij.

Infusum catechu compositum. *Compound infusion of catechu.*

Lond. Ph. 1851.

℞ Catechu, powdered . . . ℥vj.
Cinnamon, bruised . . . ℥j.
Distilled water, boiling . . Oj.

Macerate for 1 hour in a closed vessel, and strain.

Edin. Ph. 1841. *Infusum catechu.*

℞ Catechu, in powder . . ℥vj.
Cinnamon, in powder . . ℥j.
Syrup . . . . . f℥iij.
Boiling water . . . . f℥xvij.

Infuse the catechu and cinnamon with the water for 2 hours, strain through linen or calico, and add the syrup.

Dubl. Ph. 1850.

℞ Catechu, in coarse powder . ℥iij.
Cinnamon bark, bruised . . ℥ss.
Boiling water . . . . . ℥ix.

Infuse for half an hour in a covered vessel, and strain. The product should measure about 8 ounces.

Med. Use.—A powerful astringent.

Dose.—℥j or ℥ij every third or fourth hour.

Infusum chirettæ. *Infusion of chiretta.*

Edin. Ph. 1841.

℞ Chiretta . . . . . ℥iv.
Boiling water . . . . . Oj.

Infuse for 2 hours, and strain through linen or calico.

Dubl. Ph. 1850.

℞ Chiretta, bruised . . . ℥ij.
Boiling water . . . . ℥ixss.

Infuse for 1 hour in a covered vessel, and strain. The product should measure about 8 ounces.

Med. Use.—A bitter vehicle for alkalies and the salts of iron in atonic dyspepsia.

Dose.—f ℥ij 3 times a day.

Infusum cinchonæ. *Infusion of cinchona.*

Lond. Ph. 1851.

℞ Bruised yellow cinchona . . ℥j.
Boiling distilled water . . Oj.

Macerate for 2 hours in a closed vessel, and strain.

Edin. Ph. 1841.

℞ Any species of cinchona, according to prescription, in powder . . . . . ℥j.
Boiling water . . . . . Oj.

Infuse for 4 hours in a covered vessel, and then strain through linen or calico.

Dubl. Ph. 1850.

℞ Peruvian bark (crown or pale), in coarse powder . . . ℥j.
Boiling water . . . . . Oss.

Infuse for 1 hour in a covered vessel, and filter through paper. The produce should measure about 8 ounces.

Med. Use.—Tonic.

Dose.—f ℥j to f ℥iij 2 or 3 times a day.

Infusum cinchonæ spissatum. *Concentrated infusion of cinchona.*

Lond. Ph. 1851.

℞ Coarsely powdered yellow cinchona . . . . . ℔iij.
Distilled water . . . . Ovj.
Rectified spirit, as much as may be sufficient.

Macerate the cinchona in the same manner as is directed for preparing the extract of cinchona, and strain. Evaporate the infusions, mixed together, by a water-bath, to a fourth part; and set aside that the dregs may subside. Pour off the clear liquor, and strain that which remains. Then mix, and evaporate again, that the specific weight of the liquid may be 1·200. Drop in the spirit, very carefully, to this, when it shall have cooled, so that 3 fluid-drachms may be added to each fluid-ounce of the liquor. Lastly, set aside the liquor for 20 days, that it may be entirely defecated.

Infusum cinchonæ pallidæ. *Infusion of pale cinchona.* (*Infusum cinchonæ*, Ph. 1836.)

Lond. Ph. 1851.

Prepare this in the same manner as we have directed the infusion of cinchona to be prepared.

Infusum cinchonæ pallidæ spissatum. *Concentrated infusion of pale cinchona.*

Prepare this in the same manner as we have directed the concentrated infusion of cinchona to be prepared.

Infusum cinchonæ compositum. *Compound infusion of Peruvian bark.*

U. S. Ph. 1850.

℞ Peruvian bark, in powder. . ℥j.
Aromatic sulphuric acid . . f℥j.
Water . . . . . Oj.

Macerate for 12 hours, occasionally shaking, and strain.

Infusum cusparіæ. *Infusion of cusparia.*

Lond. Ph. 1851, and Edin. Ph. 1841.

℞ Cusparia, bruised . . . . ℥v.
Distilled water, boiling . . Oj.

Macerate for 2 hours in a closed vessel, and strain.

Med. Use.—Tonic and stimulant.

Dose.—f℥iss to f℥ij.

Infusum digitalis. *Infusion of foxglove.*

Lond. Ph. 1851.

℞ Foxglove leaves, dried. . . ℥j.
Spirit of cinnamon . . . f℥j.
Distilled water, boiling . . Oj.

Macerate the foxglove leaves in the water for 4 hours in a closed vessel, and strain; then add the spirit.

Edin. Ph. 1841.

℞ Digitalis, dried. . . . ℥ij.
Spirit of cinnamon. . . f℥ij.
Boiling water . . . . f℥xviij.

Infuse the digitalis in the water in a covered vessel for 4 hours; strain through linen or calico; and then add the spirit of cinnamon.

Dubl. Ph. 1850.

℞ Foxglove leaves, dried . . ℥j.
Boiling water . . . . . ℥ix.

Infuse for 1 hour in a covered vessel, and strain. The product should measure about 8 ounces.

There is an important difference in the strength of these infusions.

Dose.—℥ss to ℥j of that made by the Lond. Ph.

Infusum ergotæ. *Infusion of ergot.*

Dubl. Ph. 1850.

℞ Ergot of rye, in coarse powder ℥ij.
Boiling water . . . . . ℥ix.

Infuse for 1 hour in a covered vessel, and strain. The product should measure about 8 ounces.

Infusum gentianæ compositum. *Compound infusion of gentian.*

Lond. Ph. 1851.

℞ Gentian, sliced,
Orange-peel, dried, āā. . . ℥ij.
Lemon-peel, fresh . . . . ℥iv.
Distilled water, boiling . . Oj.

Macerate for an hour in a closed vessel, and strain.

Edin. Ph. 1841. *Infusum gentianæ.*

℞ Gentian, sliced . . . . ℥ss.
Bitter orange-peel, dried and bruised . . . . . ℥j.
Coriander, bruised . . . ℥j.
Proof spirit . . . . . f℥iv.
Cold water . . . . . f℥xvj.

Pour the spirit upon the solids; in 3 hours add the water, and in 12 hours more strain through linen or calico.

Dubl. Ph. 1850.

℞ Gentian root, bruised,
Orange-peel, dried, of each. . ℥ij.
Boiling water . . . . . Oss.

Infuse for 1 hour in a covered vessel, and strain. The product should measure about 8 ounces.

Med. Use.—An elegant tonic.

Dose.—f℥j to f℥ij.

SYNONYMES.

Infusum amarum simplex. Lond. Ph. 1721, 1746.

Infusum eupatorii. *Infusion of thoroughwort.*

U. S. Ph. 1850.

℞ Thoroughwort, dried herb . . ℥j.
Boiling water . . . . . Oj.

Macerate for 2 hours in a covered vessel, and strain.

Med. Use.—Tonic, in doses of f℥ij, 2 or 3 times a day; emetic and diaphoretic in large tepid doses.

Infusum juniperi. *Infusion of juniper.*

Dubl. Ph. 1850.

℞ Juniper berries, bruised . . ℥j.
Boiling water . . . . . Oss.

Infuse for 1 hour in a covered vessel, and strain. The product should measure about 8 ounces.

Infusum krameriæ. *Infusion of krameria or rhatany.*

Lond. Ph. 1851.

℞ Rhatany . . . . . ℥j.
Boiling distilled water. . . Oj.

Macerate for 4 hours in a closed vessel, and strain.

Dubl. Ph. 1850.

℞ Rhatany root, bruised. . . ℥ss.
Boiling water . . . . . ℥ix.

Digest for 1 hour in a covered vessel, and strain. The product should measure about 8 ounces.

Med. Use.—Astringent; useful in chronic diarrhœa.

Dose.—f℥ss to f℥ij.

Infusum lini compositum. *Compound infusion of linseed.*

Lond. Ph. 1851.

℞ Linseed . . . . . ℥x.
Fresh sliced liquorice . . . ℥ij.
Boiling distilled water . . Oj.

Macerate for 4 hours in a closed vessel near the fire, and strain.

Edin. Ph. 1841. *Infusum lini.*

℞ Linseed . . . . . ʒvj.
Liquorice root, bruised . . ʒij.
Boiling water . . . . . Oj.

Digest near the fire in a covered vessel, for 4 hours, and then strain through linen or calico.

Med. Use.—As a demulcent in catarrh, gonorrhœa, &c.

Dose.—℥ij or ℥iij, frequently repeated in the course of the day.

Infusum lupuli. *Infusion of hop.*

Lond. Ph. 1851.

℞ Hops . . . . . ʒvj.
Distilled water, boiling . . Oj.

Macerate for 4 hours in a closed vessel, and strain.

Med. Use. — Tonic, stomachic, and slightly narcotic.

Dose.—f℥j to f℥iss.

Infusum matico. *Infusion of matico.*

Dubl. Ph. 1850.

℞ Matico leaves, cut small . . ℥ss.
Boiling water . . . . . Oss.

Infuse for 1 hour in a covered vessel, and strain. The product should measure about 8 ounces.

Infusum menthæ viridis. *Infusion of spearmint.*

Dubl. Ph. 1850.

℞ Spearmint, dried and cut small ʒiij.
Boiling water . . . . . Oss.

Infuse for 15 minutes in a covered vessel, and strain. The product should measure about 8 ounces.

Med. Use.—A stomachic.

Infusum pruni virginianæ. *Infusion of wild cherry bark.*

U. S. Ph. 1850.

℞ Wild cherry bark, bruised . ℥ss.
Water (cold) . . . . . Oj.

Macerate for 24 hours, and strain.

Med. Use.—Tonic and soothing, in doses of f℥ij, 3 or 4 times a day.

INFUSUM PAREIRÆ. *Infusion of pareira.*

Lond. Ph. 1836, and Edin. Ph. 1841.

℞ Pareira . . . . . ʒvj.
Distilled water, boiling . . Oj.

Macerate for 2 hours in a vessel lightly covered, and strain.

Dubl. Ph. 1850.

℞ Pareira root, bruised, and torn into shreds . . . . . ℥ss.
Boiling water . . . . . ℥ix.

Digest for 1 hour in a covered vessel, and strain. The product should measure about 8 ounces.

Med. Use.—In irritable states of the bladder.

Dose.—fʒj to fʒij.

INFUSUM POLYGALÆ. *Infusion of polygala (Seneka). (Decoctum Senegæ* of Ph. 1826.)

Dubl. Ph. 1850.

℞ Polygala (Seneka) root, bruised . ℥ss.
Boiling water . . . . . ℥ix.

Digest for 1 hour in a covered vessel, and strain. The product should measure about 8 ounces.

See *Infusum Senegæ.*

INFUSUM QUASSIÆ. *Infusion of quassia.*

Lond. Ph. 1851.

℞ Quassia, sliced . . . . . ℈ij.
Distilled water, boiling . . Oj.

Macerate for 2 hours in a closed vessel, and strain.

Edin. Ph. 1841.

℞ Quassia, in chips . . . . ʒj.
Boiling water . . . . Oj.

Infuse for 2 hours in a covered vessel, and then strain through linen or calico.

Dubl. Ph. 1850.

℞ Quassia wood, rasped . . ʒj.
Boiling water . . . . ℥viiiss.

Infuse for 1 hour in a covered vessel, and strain. The product should measure about 8 ounces.

Med. Use.—Tonic.

Dose.—fʒj to fʒij.

INFUSUM RHEI. *Infusion of rhubarb.*

Lond. Ph. 1851.

℞ Rhubarb, sliced . . . . ʒiij.
Distilled water, boiling . . Oj.

Macerate for 2 hours in a closed vessel, and strain.

Edin. Ph. 1841.

℞ Rhubarb, bruised into coarse powder . . . . . ʒj.
Spirit of cinnamon . . . fʒij.
Boiling water . . . . fʒxviij.

Infuse the rhubarb for 12 hours in the water in a covered vessel; add the spirit, and strain through linen or calico.

Dubl. Ph. 1850.

℞ Rhubarb root, in thin slices . ʒij.
Boiling water . . . . . ℥ix.

Infuse for 1 hour in a covered vessel, and strain. The product should measure about 8 ounces.

Med. Use.—As a mild purgative and stomachic.

Dose.—fʒj to fʒiij.

INFUSUM ROSÆ COMPOSITUM. *Compound infusion of rose.*

Lond. Ph. 1851.

℞ Dried French rose . . . . ʒiij.
Diluted sulphuric acid . . fʒiss.
Sugar . . . . . ʒvj.
Boiling distilled water . . Oj.

Pour the water upon the rose, previously pulled to pieces, then mix in the acid. Macerate for 2 hours, and strain the liquor. Lastly add the sugar.

Edin. Ph. 1841. *Infusum rosæ.*

℞ Rosa gallica, dried . . . ʒiij.
Diluted sulphuric acid . . fʒiss.
Pure sugar . . . . . ʒvj.
Boiling water . . . . . Oj.

Infuse the rose petals in the water in a covered vessel of glass or porcelain, not glazed with lead, for 1 hour; then add the acid, strain through linen or calico, and dissolve the sugar in the liquor.

Infusum rosæ acidum.

Dubl. Ph. 1850.

℞ Petals of the Gallic rose . . ℥ij.
Dilute sulphuric acid . . . f℥j.
Boiling water . . . . . Oss.

Infuse the petals for 1 hour in the water in a covered vessel; strain, and add the acid. The product should measure about 8 ounces.

Med. Use.—Astringent and refrigerant. It is also used as an elegant vehicle for the exhibition of sulphate of magnesia.

Dose.—f℥j to f℥ij.

SYNONYMES.

Tinctura rosarum rubrarum.—Lond. Ph. 1721.

Tinctura rosarum.—Lond. Ph. 1746.

Infusum sassafras medullæ. *Infusion of sassafras pith.*

U. S. Ph. 1850.

℞ Sassafras pith . . . . . ʒj.
Water. . . . . Oj.

Macerate for 3 hours, and strain.

Infusum scoparii. *Infusion of broom.*

Lond. Ph. 1836.

℞ Broom. . . . . ℥j
Boiling distilled water . . Oj.

Macerate for 2 hours in a vessel lightly covered, and strain.

Med. Use.—Diuretic.

Dose.—f℥j to f℥ij.

Infusum sarsaparillæ compositum. *Compound infusion of sarsaparilla.*

Dubl. Ph. 1826.

℞ Sarsaparilla root, previously cleansed with water, and sliced . . . . . ℥j.
Lime water . . . . . ℥xvj.

Macerate for 12 hours in a closed vessel, shaking occasionally, and strain.

Med. Use.—The same as of the decoction.

Dose.—From ℥iv to ℥vj, 2 or 3 times a day.

Infusum senegæ. *Infusion of senega.*

Edin. Ph. 1841.

℞ Senega . . . . . ʒx.
Boiling water . . . . . Oj.

Infuse for 4 hours in a covered vessel, and strain.

Med. Use.—Tonic in typhoid pneumonia and bronchitis.

Dose.—f℥j to f℥iss.

Infusum sennæ.

Edin. Ph. 1841.

℞ Senna. . . . . ℥iss.
Ginger, bruised . . . . ʒiv.
Boiling water. . . . . Oj.

Infuse for an hour in a covered vessel; and then strain through linen or calico.

Infusum sennæ compositum. *Compound infusion of senna.*

Lond. Ph. 1851.

℞ Senna . . . . . ʒxv.
Ginger, bruised . . . . ʒiv.
Distilled water, boiling . . Oj.

Macerate for an hour in a closed vessel, and strain.

Edin. Ph. 1841.

℞ Senna . . . . . ʒj.
Tamarinds . . . . . ℥j.
Coriander, bruised . . . ʒj.
Muscovado (sugar) . . . ℥ss.
Boiling water . . . . f℥viij.

Infuse for 4 hours, with occasional stirring in a covered vessel, not glazed with lead, and then strain through linen or calico.

This infusion may be likewise made with twice or thrice the prescribed quantity of senna.

Dubl. Ph. 1850.

℞ Senna leaves . . . . . ℥ss.
Ginger root, sliced . . . ʒss.
Boiling water . . . . . Oss.

Infuse for 1 hour in a covered vessel, and strain. The product should measure about 8 ounces.

Med. Use.—A useful purgative, either alone or combined with neutral salts.

Dose.—f℥j to f℥ij.

SYNONYMES.

Infusum sennæ.—Lond. Ph. 1721.

Infusum sennæ commune.—Lond. Ph. 1746.

Infusum sennæ simplex.—Lond. Ph. 1788.

Infusum serpentariæ. *Infusion of serpentaria.*

Lond. Ph. 1851. Edin. Ph. 1841.

℞ Serpentaria . . . . . ℥ss.
Boiling water . . . . . Oj.

Macerate for 4 hours in a covered vessel, and then strain.

Med. Use.—A stimulating tonic.

Dose.—f℥ss to f℥ij.

Infusum simarubæ. *Infusion of simaruba.*

Edin. Ph. 1841.

℞ Simaruba, bruised . . . . ʒiij.
Distilled water, boiling . . Oj.

Macerate for 2 hours in a vessel lightly covered, and strain.

Dubl. Ph. 1850.

℞ Simaruba root bark, bruised . ʒij.
Boiling water . . . . . ℥lx.

Infuse for 1 hour in a covered vessel, and strain. The product should measure about 8 ounces.

Med. Use.—Astringent: has been used in diarrhœa and dysentery.

Dose.—f℥j to f℥ij.

Infusum spigeliæ. *Infusion of pink root.*

U. S. Ph. 1850.

℞ Pink root . . . . . ℥ss.
Boiling water . . . . . Oj.

Macerate for 2 hours in a covered vessel, and strain.

Infusum tabaci. *Infusion of tobacco.*

Dubl. Ph. 1826.

℞ Tobacco leaves . . . . ʒj.
Boiling water . . . . ℥xvj.

Macerate for an hour in a lightly covered vessel, and strain.

U. S. Ph. 1850.

℞ Tobacco . . . . . ʒj.
Boiling water . . . . . Oj.

Macerate for an hour in a covered vessel, and strain.

Med. Use.—Chiefly in the form of enema, in ileus, incarcerated hernia, and dysury.

Infusum ulmi. *Infusion of slippery elm-bark.*

U. S. Ph. 1850.

℞ Slippery elm bark, sliced and bruised . . . . . ℥j.
Boiling water . . . . . Oj.

Macerate for 2 hours in a covered vessel, and strain.

Infusum valerianæ. *Infusion of valerian.*

Lond. Ph. 1851.

℞ Valerian . . . . . ℥ss.
Distilled water, boiling . . Oj.

Macerate for half an hour in a closed vessel, and strain.

Dubl. Ph. 1850.

℞ Valerian root, bruised. . . ʒij.
Boiling water . . . . . ℥ix.

Digest for 1 hour in a covered vessel, and strain. The product should measure about 8 ounces.

Med. Use.—As a nervine in hysteria.

Dose.—f ℥j to f ℥ij.

Injectio. (From *injicio*, to throw in.) *Injection.*

Liquids intended to be thrown, by means of a syringe, into some of the vessels or cavities of the body.

Ink.

A composition or pigment for writing or printing on paper, parchment, linen, or other material.

Black writing ink.

No. 1.

℞ Bruised nutgalls	℔xij.
Common copperas	℔v.
Gum arabic	℔iv.
Water	cong. xij.
Creasote	ʒij.

Boil the nutgalls in three-fourths of the water for 1 hour, then strain. Dissolve the gum in twice its weight of hot water, and add it to the decoction. Dissolve the copperas in the remainder of the water, mix the liquors together, and make up the quantity to 12 gallons. Finally, stir in the creasote.

A few bruised cloves may be substituted for the creasote, which is added for the purpose of preventing the ink from becoming mouldy.

No. 2.

℞ Bruised nutgalls	12 parts.
Copperas, slightly calcined	4 ,,
Gum arabic	4 ,,
Water	120 ,,

Mix together in a stone bottle, and let them stand for 2 or 3 weeks, shaking the bottle from time to time. Then pour off the clear liquor, and add a little creasote to prevent mouldiness.

Logwood and other astringent substances are sometimes substituted, wholly or in part, for nutgalls.

Dr. Lewis's ink.

No. 3.

℞ Powdered sulphate of iron	ʒj.
Powdered logwood	ʒj.
Powdered galls	ʒiij.
Gum arabic	ʒj.
Vinegar	Oij.

The ingredients are to be put into a glass, or other convenient vessel, not metallic, and the mixture frequently shaken.

Ribaucourt's ink.

No. 4.

℞ Aleppo galls, in coarse powder	ʒviij.
Logwood, in thin chips	ʒiv.
Sulphate of iron	ʒiv.
Gum arabic, in powder	ʒiij.
Sulphate of copper	ʒj.
Sugar-candy	ʒj.

Boil the galls and logwood together in 12 pounds of water for 1 hour, or until half the liquid has evaporated; strain the decoction through a hair sieve, or linen cloth, and then add the other ingredients; stir the mixture until the whole is dissolved, after which, leave it to subside for 24 hours. Then decant the ink and preserve it in glass or stone-ware bottles well corked. The sulphate of copper must be omitted when the ink is intended for steel pens.

Runge's chrome ink.

No. 5.

℞ Powdered commercial extract of logwood	ʒj.
Boiling water	℔iv.
Yellow (neutral) chromate of potash	ʒj.

Dissolve the extract in the water, then add the chromate of potash.

Or,

℞ Logwood chips	℔xxij.

exhaust with water, and boil the decoction down to 14 gallons.

To every 1000 parts of such decoction add 1 part of yellow (neutral) chromate of potash.

According to Stein, this ink is improved by the addition of a few drops of a solution of corrosive sublimate.

Girond's substitute for galls, called *Damajavag.*

The extract denominated "Damajavag," is prepared by immersing 1 hundred weight of the shells of chestnuts, broken into frag-

ments, in about 180 or 200 quarts of water, contained in a vessel of copper or any material except iron, for about 12 hours. It is then boiled for 3 hours, strained, and the liquor evaporated to the consistence of paste. It may then be cut into cakes of any convenient size, and dried in an oven at a low temperature. The quantity of *damajavag* obtained from the above will be about 8 or 10 pounds.

This substance can be obtained in the same manner from the wood, and also the sap, of the chestnut tree.

When powdered it may be used in the place of pulverized gall-nuts.

Dr. Normandy's purple ink, called *the 'King of Purples.'*

℞ Campeachy wood . .	℔xij.
Boiling water . . .	cong. xij.
Verdigris, or acetate of copper	℔j.
Alum	℔xiv.

Digest the two first ingredients together, and strain the liquor upon the finely powdered salt of copper, then immediately add the alum.

To 340 gallons of this liquid, add 80 pounds of gum arabic, or gum senegal.

Let these remain for 3 or 4 days, and a beautiful purple will be produced.

Blue writing ink.

℞ Sulphate of iron . . .	℥iv.
Sulphuric acid . . .	f℥iijss.
Nitric acid	f℥j, or q.s.
Ferrocyanide of potassium	℥vj.
Water	q. s.

Dissolve the sulphate of iron in 1 pint of water, add the sulphuric acid, and heat the solution to boiling; then pour in the nitric acid in small quantities at a time, continuing the boiling until the iron is peroxidized. Dissolve the ferrocyanide of potassium in 2 pints of water, and add the former solution, when cold, to this. Collect the precipitate that will be formed, on a filter, and carefully wash it with distilled water until the blue precipitate begins to dissolve in the water. It will now be found to be soluble in pure water, although insoluble if any other salt be present. Rub what remains, in a mortar, with distilled water, until a clear solution is obtained of the required intensity of colour.

A little oxalic acid is sometimes added, but this is not necessary if the above instructions be carefully followed, as the precipitate will be perfectly and permanently soluble in pure water. See *Soluble Prussian blue*, page 755.

Copying ink.

No. 1.

℞ Gum arabic	240 grs.
Spanish liquorice . . .	20 „
Water	720 „

Dissolve, with the application of a little heat. Then rub ℥j of lamp-black with ℥j of sherry wine, and add to it the above solution.

No. 2.

Add ℥j of treacle to a pint of common black ink.

Writing made with this ink may be transferred by means of a copying machine.

Gold ink.

This is made by mixing finely divided gold leaf, or Dutch metal, with thin gum-water. The writing, when dry, may be burnished.

Green ink. (Klaproth's.)

Boil together a mixture of 2 parts of verdigris, 1 part of cream of tartar, and 8 parts of water, until reduced to one-half; then strain through cloth, and bottle the solution for use.

Horticultural ink. Ink for writing on zinc labels for gardens.

℞ Chloride of platinum . .	grs. v.
Distilled water. . . .	f℥j.

Dissolve.

Writing made on zinc with this solution almost immediately turns black, and cannot be removed by washing.

Incorrodible ink. For labelling bottles containing strong acids or alkalis.

No. 1.

℞ Powdered copal. . . . 25 grs.
Oil of lavender . . . . 200 „

Dissolve with a gentle heat and colour with lamp-black, indigo, or vermilion.

No. 2.

℞ Asphaltum. . . . . 1 part.
Oil of turpentine . . . 2 parts.

Dissolve with heat.

Indian ink.

This is generally considered to be fine lamp-black mixed with a solution of gelatine and dried. It has been recommended that the lamp-black should be previously purified by treating it with solution of potash; and that the gelatinizing power of the gelatine should be partly destroyed by long-continued boiling. It is generally scented with musk or ambergris and a little camphor.

Marking ink. For marking linen, &c., *with preparation.*

(*The ink.*)

℞ Nitrate of silver . . . ʒj. ϑij.
Gum arabic, powdered . . ʒij.
Sap green . . . . . ϑj.
Distilled water . . . . ℥j.

Dissolve.

(*The preparation, or mordant.*)

℞ Carbonate of soda. . . . ʒij.
Distilled water . . . . Oj.

Dissolve.

Marking ink. For marking linen, &c., *without preparation.*

No. I.

℞ Nitrate of silver . . . ʒj.
Carbonate of soda, crystallized . . . . ʒiss.
Tartaric acid. . . . ʒij. ϑij.
Strong *liquor ammoniæ* . f℥ij or q.s.
Archil . . . . . f℥ss.
White sugar . . . . ʒvj.
Powdered gum arabic . ʒx.
Distilled water . . . q. s.

Dissolve the nitrate of silver and carbonate of soda separately in distilled water; mix the solutions; collect and wash the precipitate on a filter; introduce the washed precipitate, still moist, into a Wedgwood mortar, and add to it the tartaric acid, rubbing them together until effervescence has ceased; add *liquor ammoniæ* in sufficient quantity to dissolve the tartrate of silver; then mix in the archil, white sugar, and powdered gum arabic, and add as much distilled water, if required, as will make f℥vj of the mixture.

No. 2.

℞ Nitrate of silver,
Bitartrate of potash, āā . . ʒj.
Solution of ammonia . . . ℥iv.
Archil. . . . . ℥ss.
White sugar . . . . . ʒvj.
Powdered gum arabic. . . ʒx.

Rub the nitrate of silver and bitartrate of potash together, then add the ammonia, the archil, and the other ingredients.

It may be further thickened by the addition of more gum, when required to be used with a stencil.

Linen, &c., marked with this ink will require to have a hot iron passed over it, or the part marked must be held to the fire until the marks have assumed a jet black colour.

Printing ink.

No. 1.

Put linseed oil into an iron pot capable of holding two or three times the quantity introduced; heat it over a fire until a dense vapour arises from it; then, having removed the pot from the fire, apply a light, attached to the end of a stick, to the surface of the oil, when the vapour will inflame; allow it to burn until, on taking out a small quantity of the oil, it is found to be thick and tenacious; the flame is then to be extinguished by putting a cover over the pot. To 6 quarts of oil thus prepared, add gradually 6 pounds of black rosin, and dissolve it by the aid of heat, then add, in small quantities at a time, 1¾ pound of dry yellow soap, cut into slices,

and effect the combination by stirring and the application of heat. This is the *varnish* of which the ink is to be made, and on the careful preparation of which the quality of the ink much depends. This is to be mixed with 2½ ounces of ground indigo, the same quantity of ground Prussian blue, 4 pounds of mineral lamp-black, and 3½ pounds of the best vegetable lamp-black, and the whole ground together into a perfectly smooth and uniform paste.

No. 2.

The following formula has been recommended for the extemporaneous preparation of printing ink.

℞ Balsam of copaiba . . .	℥ix.
Lamp-black	℥iij.
Indigo and Prussian blue, āā	ʒv.
Indian red	ʒvj.
Dry yellow soap . . .	℥iij.

To be ground together on a slab, with a muller, until perfectly smooth.

No. 3.

The following practical instructions, founded on long experience, have been furnished by Mr. Davison for preparing printers' ink:—The quality of printing ink depends greatly on the proper preparation of the varnish, which consists of boiled linseed oil, black or amber rosin, and spirit of turpentine. The best oil should be used, and the pan employed for boiling it should be so set, that the fire is only applied to the bottom. Having put the oil into the pan, which should not be more than half full, apply a gentle heat at first, so as to raise the temperature to about 280° Fah.; when the oil has attained this temperature, commence adding the driers, which consist of the best litharge and dried sulphate of zinc, in the proportions of two pounds of the former and one pound of the latter, to every twenty gallons of oil. The driers must be added gradually, at the same time moderating the heat, as the oil will froth up, and without care, boil over. When the driers have been all added, and the frothing has ceased, the heat must be gradually raised to about 500° Fah., at which temperature it must be kept until, on taking some of the oil out and cooling it, it is found to have the consistence of thin honey. Some judgment is required in determining when the heat should be withdrawn, which can only be acquired from experience. After withdrawing the fire, the oil should be allowed to stand for twenty-four hours, then add to every ten pounds of the oil five pounds of clear black rosin, and half a pound of spirit of turpentine.

Mr. Davison's instructions for making printing ink are, simply to mix the above varnish with lamp-black. He says he has never used any other ingredients in the common ink, the whole art consisting in the proper preparation of the varnish. For the finer sorts of ink, however, Canada balsam is sometimes added, in the proportion of one pound to twelve pounds of the varnish.

Printing inks of different colours are made by mixing the *varnish* described in formula No. 1 with various pigments, such as vermilion, red lead, Indian red, chrome yellow, chrome red, verdigris, Prussian blue, &c.

Red ink.

No. 1.

℞ Brazil wood.	℥iv.
Alum	℥ij.
Distilled water	Oij.

Boil for a quarter of an hour and strain, then add

Gum arabic	℥j.

Mix, and bottle it for use.

No. 2.

℞ Garancine	℥j.
Solution of ammonia . . .	℥j.
Distilled water	Oj.
Gum arabic	℥ss.

Rub the garancine with the ammonia and water in a mortar, and filter it, and dissolve the gum in the solution.

Carmine red ink.

℞ Carmine.	Gr. xij.
Weak solution of ammonia	℥iij.
Powdered gum . . .	Gr. xviij.

Dissolve the carmine in the solution of ammonia with the aid of a gentle heat, and then add the gum.

Reade's patented red ink.

Boil cochineal repeatedly with water, until it ceases, or nearly so, to give out more colouring matter. Then boil the residue of the cochineal with a weak solution of ammonia, which will extract the remainder of the colouring matter. Mix the liquors together, and precipitate the colouring matter with ammonio-bichloride of tin. The precipitate thus obtained is dissolved in solution of ammonia, and protoiodide of tin is added, until sufficient brilliancy of colour is obtained. The solution is diluted with water to the required extent.

Stephens' red ink.

Dissolve 2 ounces of carbonate of potash in 8 ounces of water, then add 4 ounces of cream of tartar, and stir them together until the effervescence has ceased. Mix this solution with a solution of oxalate or oxalo-phosphate of alumina (made by dissolving moist precipitate of alumina or phosphate of alumina in solution of oxalic acid). To the liquor thus prepared add as much powdered cochineal as will give it a fine red colour. Let it stand for 48 hours, and then strain it off for use.

Silver ink.

Made by mixing silver powder with thin gum water.

Sympathetic ink.

Under this name solutions are used for writing on paper, which writing is not legible until acted on by some chemical agent. Solution of nitrate or chloride of cobalt forms the best sympathetic ink; the writing is developed on holding the paper to the fire. Solution of chloride of copper acts in a similar manner. Writing made with solution of sulphate of iron is developed on washing it over with solution of prussiate of potash or decoction of nut-galls; and many other solutions of a similar description may be made.

Yellow ink.

℞ French berries	ʒiv.
Alum	ʒij.
Distilled water	Oij.

Boil for a quarter of an hour and strain, then add.

Gum arabic	ʒj.

Mix, and bottle it for use.

Berzelius's indelible ink.

To a weak solution of vanadate of ammonia, add an infusion of galls.

The quantity of salt necessary for the production of a perfectly black ink is exceedingly small.

Iodinium. *Iodine.* (From ἰώδης, violet-coloured.) *Symb.* I. *equiv.* 126.

This substance is obtained from the dark-coloured mother-liquors, which remain after separating the more readily crystallizable salts from the lixivium of kelp. These liquors are concentrated by evaporation, and then sulphuric acid and oxide of manganese being added, in a leaden retort, and heat applied, the iodine distils over and is condensed in glass or earthen receivers.

Lond. Ph. 1851.

Note.—Black, with metallic lustre; it resembles chlorine in odour. Heat being applied, it in the first place melts, afterwards is sublimed with a violet vapour. It is dissolved in rectified spirit. The solution affects starch with a blue colour. Thirty-nine grains of iodine dissolved in 3 ounces of water with 9 grains of lime, stain the solution with a yellow or brownish colour.

Edin. Ph. 1841.

Note.—Entirely vaporizable. Thirty-nine grains, with 9 grains of quick-lime, and 3 ounces of water, when heated short of ebullition, slowly form a perfect solution, which is yellowish or brownish, if the iodine be pure, but colourless if there be above two per cent. of water, or other impurity.

Dubl. Ph. 1850. *Iodinum purum.*

℞ Iodine of commerce, any convenient quantity.

Introduce it into a deep porcelain capsule of a circular shape, and having covered this as accurately as possible with a glass matrass filled with cold water, apply to the capsule a water-heat for the space of 20 minutes; and then withdrawing the heat, permit the capsule to cool. Should the sublimate attached to the bottom of the matrass, include acicular crystals of a white colour and pungent odour, let it be scraped off with a glass rod and rejected. The matrass being now returned to its previous position, a gentle and steady heat (that of a gas-lamp answers well) is to be applied, so as to sublime the entire of the iodine. Upon now lifting off the matrass, the purified product will be found attached to its bottom. When separated it should be immediately enclosed in a bottle furnished with an accurately-ground stopper.

Arsenici iodidum. *Iodide of arsenic.*

No. 1.

(Maegendi.)

℞	Metallic arsenic . . .	16 parts.
	Iodine	100 „

Mix, and sublime in a glass alembic.

It will be in the form of orange-coloured needles.

No. 2.

(Gopel.)

℞	Metallic arsenic . . .	ʒi.
	Iodine	ʒij.

Mix together, melt at as low a temperature as possible, and keep in a state of fusion for some time. When cold, treat the mass with ʒiv of cold alcohol, filter the solution from the residual arsenic; then pass arseniuretted hydrogen gas through the solution until it acquires a wine-yellow colour, and finally evaporate at a temperature not exceeding 122° Fah., until it crystallizes.

Liquor arsenici periodidi. *Solution of periodide of arsenic.*

(Wackenroder.)

℞	Metallic arsenic . . .	gr. j.
	Iodine	gr. vj.
	Distilled water. . . .	ʒvj.

Digest at a gentle heat until dissolved; then filter the solution, and evaporate it to dryness, by the heat of a water-bath. Dissolve the salt in fʒvj of distilled water.

Iodoformum. *Iodoform.*

No. 1.

℞	Distilled water	ʒxij.
	Rectified spirit	ʒij.
	Iodine	ʒj.
	Bicarbonate of soda . . .	ʒj.

Put the ingredients into a flask, and apply the heat of a water-bath. The liquor will at first assume a dark-brown colour, the vapour of acetic ether, with a little iodine and water, will be disengaged, and, after continuing the heat for some time, the colour will disappear, and the iodoform, in bright yellow scales, will be deposited. The flask is now to be removed from the bath, and the iodoform collected on a filter and washed with a small quantity of cold water. More iodine may be added to the remaining solution as long as it becomes decolorized by a repetition of the process.

No. 2.

℞	Iodine	
	Rectified spirit, each . .	1 part.
	Crystallized carbonate of soda.	2 parts.
	Water	10 „

Dissolve the soda in the water, add the spirit, and heat the mixture to 140° or 170° Fah., then gradually add the iodine and continue the heat until the iodine is dissolved and the liquor has become colourless, when a portion of iodoform will separate, and this should be collected on a filter. The liquor is then to be heated again to the same temperature, and as much spirit and carbonate of soda as was originally employed, is to be added, after which a current of chlorine is to be rapidly passed through the liquor, while the latter is kept

agitated. Iodoform will now be abundantly formed, which may be separated as before. By adding a fresh quantity of soda, spirit, and chlorine, a further portion of iodoform may be obtained.

IRIDIUM. (From *iris*, the rainbow, in consequence of the different colours assumed by its compounds.) *Symb.* Ir., *equiv.* 98.

One of the metals which accompanies platinum. It is said to be the heaviest of the metals, having a sp. gr. 23 to 26. It is also the most infusible, and the hardest metal, and is said not to be acted on by any acid.

ISSUE PEAS. *Pisæ pro fonticulis.*

Small globular bodies used for keeping open issues. Those most frequently used are made from *orange berries*, the immature fruit of the orange tree, which are turned in a lathe. They are sometimes made in a similar way from orris root. The following compositions are also used when more active applications are required.

No. 1.

℞ Bees-wax	℔j.
Turmeric powder	ʒviij.
Orris root, powdered	ʒiv.
Venice turpentine	q. s.

Mix into a stiff mass with heat, and form into peas.

No. 2.

℞ Bees-wax	ʒvj.
Verdigris,	
Hellebore powder, āā	ʒij.
Powdered orris root	ʒiss.
Venice turpentine	q. s.

Mix into a stiff mass with heat, and form into pills.

ISSUE PLASTER. *Sparadrapum pro fonticulis.*

No. 1.

℞ Lead plaster	℔j.
Burgundy pitch	ʒij.
Powdered orris root	ʒj.

Mix with heat, spread it on linen or paper, and cut it in small squares.

No. 2.

℞ Lead plaster	℔j.
Burgundy pitch,	
Chio turpentine,	
Bees-wax	ʒij.

Mix with heat, and spread on linen or paper.

JALAPINA. *Jalapine.*

This name is applied to decolorized resin of jalap, which may be prepared as follows:—

Boil powdered jalap in water as long as anything is dissolved. Dry and pulverize the insoluble residue, and treat this with rectified spirit. Decolorize the spirituous solution with animal charcoal, and mix it with water to precipitate the resin.

JULEPUS. *Julep.*

A term synonymous with *mixture*.

MINT JULEP.

A favourite beverage in some parts of America.

Half fill a tumbler with pounded ice; add a small wineglassful of brandy, a like quantity of rum, and a few lumps of sugar; put in a sprig of fresh mint, and stir them well together. The liquor, which is formed as the ice melts, is to be drank by sucking it through a straw.

KATCHUP. *Ketchup. Catsup.* A kind of sauce.

Mushroom katchup.

No. 1.

Sprinkle full-grown mushrooms with salt, stir them frequently for two days, squeeze them with a spoon, and collect the juice. To each pint of juice add ʒss of whole pepper; put them into a stone jar, and immerse the jar in boiling water for two hours; strain it, and add ʒss of brandy to each pint.

Should any mouldiness appear, it should be heated again in boiling water, with a little more pepper.

No. 2.

℞ Mushroom juice . . .	cong. vii.
Pimento	℥viij.
Black pepper,	
Cloves,	
Ginger, āā	℥iv.
Shallots	℥xij.
Long pepper	℥ij.
Salt	℔iv.

Boil them together for an hour, then strain, and put it into bottles.

Walnut katchup.

℞ Juice of young walnuts .	conj. j.
Anchovies	℔ij.
Shallots	℔j.
Cloves, mace, black pepper, āā	℥j.

Simmer together for 20 minutes, then strain, and bottle.

Kelp.

The crude soda ash, obtained by burning various species of fucus.

Kirchwasser.

A spirituous liquor made in Germany from bruised cherries.

Kaolin.

China clay; a fine pure clay, prepared by levigation from mouldering granite, and employed in the manufacture of porcelain.

Kermes mineral. *Sub-hydrosulphate of antimony.*

Codex, Ph. Franç. 1839.

℞ Crystallized carbonate of soda	128 parts.
Water	1280 „
Sulphuret of antimony .	6 „

Dissolve the carbonate of soda in the water with the aid of heat in a clean cast-iron pan; add the sulphuret of antimony reduced to a fine powder, and boil the mixture for about an hour, constantly stirring it; filter the boiling solution into a pan previously heated, and containing a small quantity of very hot water.

Allow the solution to cool as slowly as possible; then collect the powder which will have deposited, and wash it on a filter with cold water; subject the powder thus washed to pressure, and dry it in a stove moderately heated.

Kermes igne paratum. *Kermes mineral prepared with fire.*

Codex, Ph. Franç. 1839.

℞ Sulphuret of antimony .	50 parts.
Carbonate of potash . .	1000 „
Sulphur sublimed and washed	3 „

Mix these substances carefully, and fuse the mixture in a Hessian crucible. When the mass shall be fully fused, convey it into an iron mortar; allow it to cool, and reduce it to a fine powder. Then boil this powder in an iron vessel with

Water	1000 parts.

Filter the boiling liquor, and allow it to cool slowly; decant the solution; put the kermes on a filter, wash it carefully, and dry it as already mentioned.

Lacca. *Lac.*

A resinous substance, deposited by an insect on the branches of Ficus indica, Croton lacciferum, and some other trees (see page 172). It is met with in commerce in several forms:—

Stick-lac. Lacca in ramulis.

Consists of the twigs encrusted with the lac as deposited by the insects.

Seed-lac. Lacca in granis.

Is the resinous concretion which has been separated from the twigs, broken down in a mortar, triturated with water, by which much of the colouring matter is extracted and then dried. It is in small grains.

Shell-lac. Lacca in tabulis.

Is the seed-lac melted, strained, and run into thin layers, or scales. It differs in colour according to the quantity of colouring matter which it retains; the

lightest coloured is called *Orange-lac*. Darker varieties are distinguished as *Liver-coloured*, *Ruby*, *Garnet*, &c.

Lump-lac. Lacca in massis.

Seed-lac melted and run into cakes.

White lac. Lacca alba.

Lac deprived of colour, by boiling it in caustic solution of potash, then passing chlorine gas through the solution, and finally pulling and washing it in hot water. It is generally made into twisted sticks, and is used for making the delicate-coloured sealing-wax and colourless varnish.

Lacca in globulis. *Lake in balls.*

Ph. Græca, 1837.

Chalk or white earth is to be coloured with a pigment obtained from a decoction of Brazil-wood by alum and chloride of tin, and formed into balls.

Lac dye.

Supposed to be the colouring matter of the crude lac extracted by triturating the stick-lac with water, and evaporating the solution.

Lac lake.

This is said to be obtained by boiling the seed-lac in a solution of carbonate of soda, and precipitating the colouring matter with alum. It produces a colour similar to that of cochineal.

Solution of lac, aqueous.

℞ Shell-lac	℥v.
Borax	℥j.
Water	Oj.

Boil them together.

This may be used as a varnish, or as a vehicle for colours. Mixed with lamp-black, it has been used as an ink that will resist acids.

Lac rosæ. *Milk of roses.*

℞ Blanched almonds	℥viij.
Rose water	Oiij.
White soft soap, or Windsor soap,	
White wax,	
Oil of almonds, āā	℥ss.
Rectified spirit	℥xij.
Oil of bergamot	℥ss.
,, lavender	℥j.
Otto of roses	℥ss.

Beat the almonds with the rose water, so as to form an emulsion. Mix the soap, white wax, and oil together, with the aid of a gentle heat, and then rub this mixture in a mortar with the emulsion, and carefully strain it. Dissolve the essential oils in the spirit, and mix this with the strained emulsion.

Lapis ætites. *Ætites* (from αετίτης ab αετὸς, an eagle). *Eagle stone.*

A round or oval stone, found in Germany, Portugal, &c., about the size of a walnut, or less, but sometimes larger, of a greyish or dark colour, frequently hollow in the centre, and containing a sort of stony kernel, so that it rattles when shaken. The inner stone or kernel was called *Callimus*. These stones, of which four or five kinds are described, consist essentially of *hydrated peroxide of iron*. It was believed that the eagles furnished their nests with these stones to preserve their young. Extraordinary virtues were ascribed to them; they were considered astringent, and beneficial for arresting hæmorrhages. They were also said to promote childbirth if tied to the thigh of a woman in labour, and to prevent miscarriage if tied to the arm.

Lapis Armenis. *Chrysocolla. Armenian stone. Malachite. Mountain green. Green Bice.*

Native carbonate of copper. Originally brought from Armenia, and given in doses of 20 to 60 grains in epilepsy, &c.

Lapis Boloniensis. *Bolognian stone. Chrysolapis.*

A heavy grey stone about the size of a walnut, or larger, found in several parts

of Italy, but chiefly at the bottom of Mount *Paterne*, near the city of *Bologna*. It consists essentially of *sulphate of barytes*. These stones were formerly calcined to form what was called *Kercher's phosphorus*. The calcined powder was also used as a *depilatory*, being mixed into a paste with water, and applied to the superfluous hairs.

Lapis bufonites. *Bufonites. Batrachites. Chelonites. Toad-stone.*

Two kinds of *Toad-stones* are described:—One, round in its circumference, hollow on one side, and convex on the other, in form like a little cap or bonnet, about half an inch in diameter at the base, very smooth, and of various colours; the other, an inch or more in length, and four or five lines thick, hollowed like a trough on one side, and convex on the other. They were said to have been formed in the head of a toad, and voided by the mouth. They are now considered to be petrifactions, and have been represented as the fossil teeth of *Anarrhicas lupus* (Linn.), but this is denied by Cuvier. Many virtues were formerly ascribed to them when administered in powder.

Lapis divinus. *Pierre divine.*

Codex, Ph. Franç. 1839.

℞ Sulphate of copper,
Nitrate of potash,
Alum, āā . . . . . ʒiij
Camphor . . . . . ʒj.

Mix the three salts in powder, and heat them in a crucible until they undergo aqueous fusion; then add the camphor in fine powder, and pour the mixture on to an oiled slab. When cold, break it into pieces and keep it in a stoppered bottle.

Med. Use.—One part dissolved in 259 parts of water, and the solution filtered, is used as a collyrium.

SYNONYMES.

Cuprum aluminatum.
Lapis ophthalmicus.

Lapis Hibernicus. *Hardesia. Ardesia Hibernicæ. Tegula Hibernica. Irish slate.*

An argillaceous slate, said to contain iron and sulphur. It is found in different parts of Ireland, in masses of a bluish-black colour, which stain the hands. When powdered, it has a light-bluish tint, which becomes darker with keeping. When exposed to the fire, it acquires a pale-red colour, and emits a sulphurous smell. The powdered slate is sometimes administered by the poor as a remedy for internal bruises.

Lapis judaicus. *Lapis syriacus. Phœnicites. Tecolithus. Jews'-stone.*

Small fossil stones, usually about the size and form of an olive, found in Palestine. They are sometimes streaked with lines running from one end to the other. Two sorts are described—one, of the form of an olive, as above; the other, cylindrical, and rather larger. The latter has been distinguished as the male, and the former as the female. They are easily reduced to powder, and were formerly administered for fluxes and urinary complaints.

Lapis lyncis. *Lynx-stone.*

This name was formerly applied to *Amber*, on the supposition that this substance was the fossilized urine of the lynx. The same name has been also sometimes applied to the *Belemnites*, or *Thunder-stones*. (See page 653.)

Lapis pumicis. *Pumex. Pumice-stone.*

A white or greyish, light or lightish porous stone, found in the vicinity of active or extinct volcanoes, and believed to have been thrown up during their eruptions. It is used by painters for

smoothing the surface of wood, walls, &c., previously to painting them; also, when reduced to powder, by other artificers, for polishing glass, metals, &c. It is sometimes used as a constituent of tooth-powder.

LAPIS MEDICAMENTOSUS. *Medicinal stone.*

Lond. Ph. 1746.

℞ Alum,
Litharge,
Armenian bole, āā . . . ℔ss.
Colcothar of green vitriol . ℥iij.
Vinegar . . . . . fℨiv.

Mix and dry them until they become hard.

Med. Use.—This was formerly much used externally, as an astringent for fastening loose teeth, preserving the gums, healing and drying up ulcers and wounds, &c. It has also been used in injections for gonorrhœa.

SYNONYME.

Lapis mirabilis.

LIMONADUM. *Lemonade. Lemon sherbet. King's cup.*

No. 1.

Infuse two lemons, sliced, in a pint of boiling water, for an hour, then strain and sweeten it with sugar.

No. 2.

℞ Tartaric acid . . . . ʒij.
Water . . . . . Oij.
Sugar . . . . . ℥vj.
Essence of lemon . . . q. s.

Mix.

LIMONADUM AERATUM. *Aërated lemonade.*

About fℨj of syrup of lemons added to a bottle of aërated water.

LIMONADUM MAGNESIÆ CITRATIS. *Citrate of magnesia lemonade.*

℞ Citric acid . . . . ʒxiij. ʒij.
Carbonate of magnesia . ℥vj. ʒv.
White sugar . . . ℥xx.
Tincture of orange or lemon peel . . . . . ʒiss.
Spring water . . . ℔xiv.

Dissolve the citric acid in the water, without heat, and add the magnesia, agitating the mixture from time to time until combination has been effected, for which five or six hours will be required. Then add the sugar and the tincture, and filter the solution, avoiding the application of heat throughout the process.

This solution is to be put into 8-ounce bottles, and into each bottle, before corking it, are to be introduced 40 grains of bicarbonate of soda.

Each bottle will contain about 6 drachms of citrate of magnesia, the purgative properties of which are about equal to those of the same weight of Glauber's salt, while it is free from the bitter taste of the latter.

LINCTUS. (From *lingo*, to lick.) *Lohoch. Illinctus.*

Terms used to designate medicines of the consistence of soft honey, which are licked off a spoon.

LINCTUS PECTORALIS. *Cough linctus.*

(Dr. Latham.)

℞ Confection of dog-rose,
Simple oxymel, āā . . . ℥j.
Compound tragacanth powder ʒij.
Compound ipecacuanha powder . . . . . ℥ss.
Syrup of tolu . . . . . ʒij.

Mix.

A teaspoonful to be taken three or four times a-day.

Med. Use.—This linctus has been extensively used, as a remedy for coughs, in the west end of London, having been found to be a safe and generally efficacious remedy.

LINIMENTUM ÆRUGINIS. *Liniment of verdigris.*

Lond. Ph. 1851.

℞ Verdigris, powdered . . . ℥j.
Vinegar . . . . . fℨvij.
Honey, ... ℥xiv.

Dissolve the verdigris in the vinegar, and strain through a linen cloth; afterwards, the honey being poured in, boil down to a proper consistence.

Med. Use.—Detergent and escharotic.

SYNONYMES.

Unguentum Ægyptiacum.—Lond. Ph. 1721.

Mel Ægyptiacus.—Lond. Ph. 1746.

Oxymel Æruginis.—Lond. Ph. 1788. Dubl. Ph. 1807.

Linimentum ammoniæ. *Liniment of ammonia.*

Lond. Ph. 1851.

℞ Solution of ammonia . . fℨj.
Olive oil . . . . . fℨij.

Shake them together till they are mixed.

Edin. Ph. 1841.

℞ Olive oil . . . . . fℨij.
Aqua ammoniæ (D. 960) . fℨj.

Mix, and agitate them well together.

Dubl. Ph. 1850.

℞ Solution of ammonia . . fℨj.
Olive oil . . . . . fℨiij.

Mix them with agitation.

Med. Use.—Rubefacient, and usefully applied around the throat in cynanche tonsillaris, spread on a piece of flannel.

SYNONYMES.

Linimentum ammoniæ fortius.—Lond. Ph. 1788. 1809. 1824.

Oleum ammoniatum.—Edin. Ph. 1839.

Volatile liniment. Oil and hartshorn.

Linimentum ammoniæ sesquicarbonatis. *Liniment of sesquicarbonate of ammonia.*

Lond. Ph. 1851.

℞ Solution of sesquicarbonate of ammonia . . . . fℨj.
Olive oil . . . . . fℨiij.

Shake them together till they are mixed.

Med. Use.—The same as liniment of ammonia.

SYNONYMES.

Linimentum volatile.—Lond. Ph. 1746.

Linimentum ammoniæ. — Lond. Ph. 1788.

Linimentum ammoniæ carbonatis. — Lond. Ph. 1809.

Linimentum ammoniæ subcarbonatis.—Lond. Ph. 1824.

Linimentum ammoniæ compositum. *Compound liniment of ammonia.*

Edin. Ph. 1841.

℞ Stronger aqua ammoniæ (D. 880) . . . . . fℨv.
Tincture of camphor . . . fℨij.
Spirit of rosemary . . . fℨj.

Mix them well together. This liniment may be also made weaker for some purposes with three fluidounces of tincture of camphor and two of spirit of rosemary.

Dr. Granville's ammoniated counter-irritants.

Contain the same ingredients as the preceding liniment. They are as follow:—

Milder ammoniated liniment.
(Dr. Granville.)

℞ Solution of ammonia (sp. gr. 872) . . . . . ℥iv.
Spirit of rosemary . . . ℥iij.
Spirit of camphor (℥j to Oj spirit) . . . . . ℥j.

Mix.

Stronger ammoniated liniment.
(Dr. Granville.)

℞ Solution of ammonia (sp. gr. 872) . . . . . ℥v.
Spirit of rosemary . . . ℥ij.
Spirit of camphor (as before) . ℥j.

Mix.

Linimentum calcis. *Liniment of lime.*

Lond. Ph. 1851.

℞ Solution of lime,
Olive oil, of each . . . f℥x.
Shake together, until they may be mixed.

Edin. Ph. 1841.

℞ Linseed oil, and
Lime water, of each equal measures.
Mix, and agitate them well together.

Dubl. Ph. 1850.

℞ Lime water
Olive oil, of each, . . . f℥ij.
Mix, and agitate them well together.

Med. Use.—A valuable application to scalds and burns.

SYNONYMES.

Oleum lini cum calce.—Edin. Ph. 1839. *Carron oil.*

Linimentum camphoræ. *Liniment of camphor.*

Lond. Ph. 1851.

℞ Camphor . . . . . ℥j.
Olive oil . . . . . f℥iv.
Dissolve the camphor in the oil.

Edin. Ph. 1841.

℞ Olive oil . . . . . f℥iv.
Camphor . . . . . ℥j.
Rub them together in a mortar till the camphor is dissolved.

Dubl. Ph. 1850. *Linimentum camphoræ. (Oleum camphoratum.)*

℞ Camphor, in thin slices . . ℥j.
Olive oil . . . . . f℥iv.
Dissolve the camphor in the oil with a gentle heat.

Med. Use.—As an embrocation to sprains and bruises, and in rheumatism also.

SYNONYMES.

Oleum camphoratum.—Edin. Ph. 1839. *Camphorated oil. Camphorated liniment.*

Linimentum camphoræ compositum. *Compound camphor liniment.*

Lond. Ph. 1851.

℞ Camphor . . . . . ℥iiss.
Oil of lavender . . . . f℥i.
Rectified spirit . . . . f℥xvij.
Stronger solution of ammonia f℥iij.
Dissolve the camphor and oil in the spirit; then add the ammonia, and shake together, until they may be mixed.

Dubl. Ph. 1850.

℞ Camphor . . . . . ℥v.
Oil of lavender . . . . f℥ij.
Rectified spirit . . . . Oiss.
Stronger solution of ammonia Oss.
Dissolve the camphor and oil of lavender in the spirit, then add the solution of ammonia, and mix with agitation.

Med. Use.—Used for the same purposes as the simple liniment; but it is much stronger.

SYNONYMES.

Linimentum camphoræ.—Lond. Ph. 1788.

Linimentum cantharidis. *Liniment of cantharides.*

Dubl. Ph. 1850.

℞ Spanish flies, in fine powder ℥iij.
Olive oil . . . . . f℥xij.
Digest the flies in the oil for 3 hours, in a steam or water bath, and strain through flannel; express the residuum and strain the oil thus obtained; finally, mix both products.

U. S. Ph. 1851.

℞ Cantharides, in powder . ℥i.
Oil of turpentine . . . Oss.
Digest for 3 hours in the heat of a water-bath, and strain.

Linimentum crotonis. *Croton oil liniment.*

Dubl. Ph. 1850.

℞ Croton oil . . . . . f℥j.
Oil of turpentine . . . f℥vij.
Mix them with agitation.

Linimentum hydrargyri. *Liniment of mercury.* (*Linimentum hydrargyri compositum.* Ph. 1836.)

Lond. Ph. 1851.

℞ Ointment of mercury,
Lard, of each . . . . ℥iv.
Camphor . . . . . ℥j.
Rectified spirit . . . . f℥j.
Solution of ammonia . . f℥iv.

Rub the camphor first with the spirit, afterwards with the lard and ointment; lastly, the ammonia being gradually dropped in; mix all.

Dubl. Ph. 1850. *Linimentum hydrargyri compositum.*

Ointment of mercury . . . ℥j.
Camphor liniment;
Solution of ammonia, of each . f℥j.

Melt the ointment in the liniment, with a gentle heat, then add the ammonia, and mix them with agitation.

Med. Use.—Stimulant and discutient. One drachm, containing nearly 10 grains of mercury, may be rubbed into the affected part night and morning.

Linimentum ioduretum gelatinosum. *Gelée pour le goitre.* (Beesley.)

℞ White soap . . . ʒvj. or ʒvij.
Proof spirit . . . f℥ij.

Dissolve with a gentle heat, and add while still warm,

Iodide of potassium, ʒiv. dissolved in
Proof spirit . . f℥ij.

Mix, and keep in wide-mouth stoppered bottles.

Linimentum opii. *Liniment of opium.*

Lond. Ph. 1851.

℞ Liniment of soap . . . . f℥vj.
Tincture of opium . . . f℥ij.
Mix.

Edin. Ph. 1841.

℞ Castile soap . . . . ℥vj.
Opium . . . . . ℥iss.
Camphor . . . . . ℥iij.
Oil of rosemary. . . . f℥vj.
Rectified spirit . . . . Oij.

Macerate the soap and opium in the spirit for three days; filter; add the oil and camphor, and agitate briskly.

Dubl. Ph. 1850. *Linimentum opii.* (*Linimentum anodynum.*)

℞ Tincture of opium,
Soap liniment, of each . . f℥j.
Mix them with agitation.

Med. Use.—A useful sedative liniment.

Linimentum saponis. *Liniment of soap.*

Lond. Ph. 1851.

℞ Soap . . . . . ℥iiss.
Camphor , ... ʒx.
Spirit of rosemary . . . f℥xviij.
Distilled water . . . . f℥ij.

Mix the water with the spirit; then add the soap and the camphor, and macerate, frequently shaking, until they may be dissolved.

Edin. Ph. 1841.

℞ Castile soap . . . . ℥v.
Camphor . . . . . ℥iiss.
Volatile oil of rosemary . f℥vj.
Rectified spirit . . . . Oij.

Digest the soap in the spirit for 3 days; add the camphor and oil, and agitate briskly.

Dubl. Ph. 1850.

℞ Castile soap, reduced to powder . . . . . ℥ij.
Camphor . . . . . ℥j.
Proof spirit . . . . f℥xvj.

Dissolve the soap in the spirit with a gentle heat, then add the camphor, and when it is dissolved, filter through paper; or, allow it to stand for some time, and decant the clear liniment.

Med. Use.—Stimulant and anodyne, and may be advantageously applied against local pains, and in bruises, rubbed upon the parts.

SYNONYMES.

Linimentum saponaceum.—Lond. Ph. 1746.

Opodeldoc.—*Soap Liniment.*

Linimentum saponato ammoniacatum. *Linimentum saponato-ammoniatum. Ammoniated soap liniment.*

Ph. Borussica, 1847.

℞ Common soap, sliced	℥iss.
Water	℔iiiss.
Rectified spirit (sp. gr. 0·897 to 0·900)	℔iss.

Dissolve and mix 3 parts of the solution with

Solution of caustic ammonia (sp. gr. ·960)	1 part.

Keep in a well-closed vessel.

Linimentum saponato-camphoratum. *Balsamum opodeldoc. Camphorated soap liniment.*

Ph. Borussica, 1847.

℞ Medicated soap	℥iss.
Camphor	℥ss.
Rectified spirit of wine (sp. gr. ·835)	℥xx.

Put them in a retort, heated by a water-bath, and when dissolved, filter whilst warm. Then add—

Oil of thyme	℥ss.
Oil of rosemary	℥j.
Solution of caustic ammonia (sp. gr. ·960)	℥j.

The solution, being again warmed in a well-closed vessel, should be immediately poured into a bottle, cooled as quickly as possible in cold water, and well stoppered.

Note.—It should be of a yellowish white colour, semi-transparent, and opalescent; not too hard, but easily liquefying with the heat of the hand.

Linimentum saponis rubefaciens.

Ph. Castr. Ruthena, 1840.

℞ Spanish soap	℔iij.
Russian tallow soap	℔ij.
Oil of turpentine	℔v.
Camphor	℔j
Cantharides, powdered	℥ss.
Rectified spirit	℔xxx.

Macerate with gentle heat for 3 days, or until the whole is dissolved, then add—

Liquor ammoniæ	℔iss.

and filter through paper.

Linimentum simplex. *Simple liniment.*

Edin. Ph. 1841.

℞ Olive oil	4 parts.
White wax	1 part.

Dissolve the wax in the oil with a gentle heat, and agitate well as the fused mass cools and concretes.

Linimentum sinapis. *Liniment of mustard.*

℞ Bruised mustard seed	℔ss.
Oil of turpentine	℔j.

Digest, with a gentle heat, for a week, then strain.

This is intended as an imitation of Whitehead's essence of mustard.

Linimentum terebinthinæ. *Liniment of turpentine.*

Lond. Ph. 1851.

℞ Soft soap	℥ij.
Camphor	℥j.
Oil of turpentine	f℥xvj.

Shake them together till they are mixed.

Dubl. Ph. 1850.

℞ Oil of turpentine	f℥v.
Ointment of resin	℥viij.

Melt the ointment, then add the oil of turpentine gradually, and stir the mixture until a uniform liniment is obtained.

Edin. Ph. 1841. *Linimentum terebinthinatum.*

℞ Resinous ointment . . . ℥iv.
Oil of turpentine . . . f℥v.
Camphor . . . . . ℥ss.

Melt the ointment, and gradually mix with it the camphor and oil, till a uniform liniment be obtained.

Med. Use.—A valuable application to recent burns. It may also be advantageously rubbed on parts affected with rheumatism.

Linimentum terebinthinæ acidum.

Ph. Castr. Ruthena, 1840.

℞ Oil of turpentine . . . ℥ij.
Olive oil . . . . . ℥v.
Dil. sulphuric acid . . . ʒiss.

Mix the turpentine and olive oil together, then add by drops the diluted sulphuric acid.

Linteum. *Lint.*

A soft woolly substance, made by scraping old linen cloth. It is employed in dressing wounds and ulcers.

Liquor aluminis compositus. *Compound solution of alum.*

Lond. Ph. 1851.

℞ Alum
Sulphate of zinc, of each . ℥j.
Distilled water . . . . Oiij.

Rub the alum and sulphate together, and dissolve in the water; then strain.

Med. Use. — A powerful astringent, applied to old ulcers, and used as a collyrium and an injection.

SYNONYMES.

Aqua aluminosa Bateana.—Lond. Ph. 1746.

Aqua aluminis composita.—Lond. Ph. 1788.

Liquor ammoniaci anisatus. *Spiritus salis ammoniaci anisatus. Anisated solution of ammonia.*

Ph. Borussica, 1847.

℞ Rectified spirit (sp. gr. ·835) ℥xij.
Oil of aniseed . . . . . ʒiij.
Caustic solution of ammonia (sp. gr. ·960) . . . . ℥iij.

Dissolve the oil in the spirit, and add the solution of ammonia.

Note.—Keep it in well-stoppered glass vessels. It should be clear, and of a light yellow colour.

Ph. Græca, 1837.

℞ Oil of aniseed . . . 1 part.
Alcohol . . . . . 24 parts.
Mix, and add—
Caustic solution of ammonia . . . . . 6 parts.
Mix and filter.

Note.—Clean, yellowish, and completely volatile. Sp. gr. ·890.

Liquor ammonii æthereus.

Ph. Saxonica, 1837.

℞ Oil of orange peel,
Oil of lemon, āā . . . gtt. iij.
Oil of nutmeg . . . . gtt. iv.
Oil of cardamom,
Oil of cubebs, āā . . . gtt. ij.
Oil of cinnamon . . . gtt. j.
Oil of cloves . . . . gtt. vij.
Solution of ammonia . . ʒij.
Rectified spirit . . . . ʒxiss.
Mix.

Liquor ammoniaci carbonici pyro-oleosi. *Spiritus cornu cervi rectificatus. Empyreumatic solution of carbonate of ammonia.*

Ph. Borussica, 1847.

℞ Empyreumatic carbonate of ammonia . . . . . ℥j.
Distilled water . . . . ℥v.

Set aside for some days, filter, and keep in well-stopped glass vessels.

Note.—It should be clear, of a light-brown colour, perfectly volatile, and of sp. gr. 1·065 to 1·070.

Liquor ammoniæ citratis. *Solution of citrate of ammonia.*

Lond. Ph. 1851.

℞ Citric acid	ʒiij.
Distilled water	Oj.
Sesquicarbonate of ammonia	ʒiiss.

Or as much as may be sufficient.

Dissolve the acid in the water, and add the sesquicarbonate to saturation.

Liquor ammoniæ sesquicarbonatis. *Solution of sesquicarbonate of ammonia.*

Lond. Ph. 1851.

℞ Sesquicarbonate of ammonia	ʒiv.
Distilled water	Oj.

Dissolve and strain.

Edin. Ph. 1841. *Aqua ammoniæ carbonatis.*

℞ Carbonate of ammonia	ʒiv.
Distilled water	Oj.

Dissolve the salt in the water.

Med. Use.—It is stimulant, anti-spasmodic, and diaphoretic; and in large doses, emetic.

Dose.—ʒss, to ʒij.

SYNONYMES.

Spiritus salis ammoniaci.—Lond. Ph. 1721, 1746.

Aqua ammoniæ.—Lond. Ph. 1788.

Liquor ammoniæ carbonatis.—Lond. Ph. 1809.

Liquor ammoniæ subcarbonatis.—Lond. Ph. 1824.

Liquor ammoniæ arseniatis. *Solution of arseniate of ammonia.*

(Biett.)

No. 1.

Dissolve *arsenic acid* in water, and neutralize it with solution of ammonia; then evaporate the solution, and allow the salt to crystallize. Dissolve 1 grain of the salt in f ʒj of distilled water.

No. 2.

Dissolve powdered *arsenious acid* in hot hydrochloric acid, then add nitric acid, in small quantities at a time, as long as red vapours are given off, and evaporate the solution to dryness; the residue will consist of *arsenic acid*, with which proceed according to the previous formula.

Dose.—From 20 to 25 drops to be given daily, increasing the dose until it reaches a drachm or more.

Liquor argenti nitratis (*recens præparatus*). *Solution of nitrate of silver.* Recently prepared.

Lond. Ph. 1851.

℞ Crystals of nitrate of silver	ʒj.
Distilled water	f ʒj.

Dissolve and strain.

Edin. Ph. 1841. *Solutio argenti nitratis.*

℞ Nitrate of silver	40 grs.
Distilled water	1600 grs.

Dissolve the salt in the water, and keep the solution in well-closed vessels.

Antimonii tartarizate liquor. *Solution of tartarized antimony.* (*Liquor tartari emetici.*)

Dubl. Ph. 1850.

℞ Tartarized antimony	ʒj.
Distilled water	Oj.
Rectified spirit	f ʒvij.

Having dissolved the tartarized antimony in the water, and cleared the solution by passing it through a paper filter, add the spirit, and preserve the product in a well-stopped bottle.

Antimonii terchloridi liquor. *Solution of terchloride of antimony.*

Dubl. Ph. 1850.

℞ Prepared sulphuret of antimony	℔j.
Muriatic acid of commerce.	Oiv.

Upon the sulphuret, placed in a porcelain capsule, pour the acid, and constantly stirring, apply to the mixture, beneath a flue with a good draught, a gentle heat, which must be gradually augmented as the development of the gas begins to slacken, and finally carried to ebullition, and maintained at this temperature for 15 minutes. The vessel being now removed from the fire, let its liquid contents be separated by filtration through calico, returning what passes through first, in order that a perfectly clear solution may be obtained. Transfer the liquid to another capsule, and, having boiled it down, to the bulk of 1 quart, allow it to cool, and preserve it in a bottle furnished with a well-ground glass stopper.

The specific gravity of this solution is 1470.

Liquor arsenici chloridi. *Solution of chloride of arsenic.*

Lond. Ph. 1851.

℞ Arsenious acid, broken into fragments	℥ss.
Hydrochloric acid	f℥iss.
Distilled water	Oj.

Boil the arsenious acid with the acid mixed with an ounce of the water, until it may be dissolved; then add as much as may be sufficient of the water, that it may accurately fill the measure of a pint.

Arsenici et hydrargyri hydriodatis liquor. *Solution of hydriodate of arsenic and mercury.*

Dubl. Ph. 1850.

℞ Pure arsenic, in fine powder	gr. vj.
Pure mercury	gr. xvj,
Pure iodine	gr. Lss.
Alcohol	f℥ss.
Distilled water	℥ix.

Or a sufficient quantity.

Rub together the arsenic, mercury, iodine, and spirit, until a dry mass is obtained, and having triturated 8 ounces of the water with this in successive portions, let the whole be transferred to a flask, and heated until it begins to boil. When cooled and filtered, let as much distilled water be added to it as will make the bulk of the solution exactly 8 fluidounces and 6 drachms.

Liquor barii chloridi. *Solution of chloride of barium.* Lond. *Solutio barytæ muriatis.* Edin.

Lond. Ph. 1851, and Edin. Ph. 1841.

℞ Chloride of barium	℥j.
Distilled water	f℥j.

Dissolve the chloride of barium, and strain.

Dubl. Ph. 1850. *Barii chloridi liquor (Barytæ muriatis aqua).*

℞ Chloride of barium	℥j,
Distilled water	℥viij.

Dissolve and filter through paper.

The specific gravity of this solution is 1088.

Med. Uses.—The internal administration of this solution has been recommended in scrofula as an external and gently escharotic application; it has been used as a stimulating and gently-escharotic application in cutaneous diseases.

Dose.—Four or five drops well diluted with water, of the London Pharmacopœia preparations.

Liquor calcis. *Solution of lime. Lime water.*

Lond. Ph. 1851.

℞ Lime	lbss.
Distilled water	Oxij.

On the lime, previously slaked with a little of the water, pour the remaining water, and shake together; then cover the vessel immediately, and set aside for 3 hours; then preserve the solution with the remaining lime in closed glass vessels, and, when it is to be used, take from the clear liquor.

Dubl. Ph. 1850. *Calcis liquor (calcis aqua).*

℞ Fresh burned lime . . . ℥ij.
Distilled water . . . . Css.

Having slaked the lime with an ounce and a half of the water, introduce it into a well-stopped bottle containing the remainder of the water, and shake well for the space of 5 minutes. After 12 hours the excess of lime will have subsided, and the clear liquor may be drawn off with a syphon as it may be required. When the entire of the solution has been withdrawn, it may be renewed by shaking the sediment at the bottom of the bottle with another Css. of water; and if the lime be pure, and the bottle be accurately stopped, this process may be successfully repeated 3 or 4 times.

Edin. Ph. 1841. *Aqua calcis.*

℞ Any convenient quantity of water; pour a little of it over about $\frac{1}{20}$th of its weight of lime; when the lime is slaked, add to it the rest of the water in a bottle, agitate well; allow the undissolved matter to subside, pour off the clear liquor when it is wanted, replacing it with more water, and agitating briskly as before.

Med. Use.—Given internally as an antacid. It is sometimes used to restrain mucous discharges, as diarrhœa and leucorrhœa; externally as a lotion in tinea capitis.

Dose.—From ʒij. to ℥j. with milk.

Liquor calumbæ. *Concentrated infusion of Calumba.*

Treat ℥v of powdered calumba root, in a displacement apparatus, with cold distilled water, until entirely exhausted. Heat the liquor to the boiling point, and then filter it. Bring the filtered liquor to f ℥xviij, either by evaporation over a water bath, or by dilution with more water, and add f ℥ij of rectified spirit.

f ℥j of this mixed with f ʒvij of water forms a liquor somewhat similar to the *infusum calumbæ*, for which it is sometimes substituted.

Liquor aurantii compositus. *Concentrated compound infusion of orange peel,* and

Liquor gentianæ compositus. *Concentrated compound infusion of gentian.*

These may be made by a process similar to that for the liquor calumbæ, using the ingredients ordered for *infusum aurantii compositum*, and *infusum gentianæ compositum*, and making the liquors eight times the strength of the infusions.

Liquor cinchonæ.

Battley.

Macerate coarsely-powdered yellow bark with twice its weight of cold distilled water, for four or six hours, and press. Repeat this two or three times; mix the liquors together; filter them; evaporate the clear liquor until the sp. gr. of it shall be 1·2; then let it stand for some hours; decant off the clear part, and add sufficient proof spirit to reduce the sp. gr. to 1·1.

Liquor ferri acetici. *Solution of acetate of iron.*

Ph. Borussica, 1847.

℞ Solution of sesquichloride of iron, (sp. gr. 1·540) . . . ℥vj.
Distilled water . . . ℔vj.
Caustic solution of ammonia (sp. gr. 960) ℥x, or an excess.
Strong acetic acid (sp. gr. 1·040) . . . . . ℥vij.

Mix the solution of sesquichloride of iron and water together, and add the solution of ammonia. Collect the precipitate on a cloth, well wash and press it, then wrap the cloth in bibulous paper, and repeat the pressing until the precipitate is completely drained. Put four or four and a half ounces of the mass into a bottle, and add to it the acetic acid, constantly shaking until the oxide of iron is dissolved, then strain the solution and keep it in a closed vessel.

Note.—It should be of a reddish-brown colour. Sp. gr. 1·140 to 1·145. 100 parts contain 8 of iron or 11·43 of oxide of iron.

Liquor ferri alkalini. *Alkaline solution of iron.*

Lond. Ph. 1824.

℞ Iron	℥iiss.
Nitric acid	f ℥ij.
Distilled water	f ℥vj.
Solution of subcarbonate of potash	f ℥vj.

Pour the acid and water, previously mixed, upon the iron; then, when bubbles have ceased to escape, pour off the acid liquor; add this gradually and at intervals to the solution of subcarbonate of potash, occasionally stirring, until, it having assumed a brown-red colour, effervescence is no longer excited. Lastly, set it aside for six hours, and pour off the solution.

This was intended as an imitation of *Stahl's tinctura martis alkalina.* It is a bad preparation, subject to decomposition.

Liquor ferri iodidi. *Solution of iodide of iron.*

U. S. Ph. 1851.

℞ Iodine	℥ij.
Iron filings	℥j.
Sugar, in powder	℥xij.
Distilled water a sufficient quantity.	

Mix the iodine with five fluidounces of the distilled water, in a porcelain or glass vessel, and gradually add the iron filings, stirring constantly. Heat the mixture gently until all the iodine is dissolved, or until the liquor acquires a light-greenish colour. Then filter the solution into a glass bottle, containing the sugar, and after it has passed, pour distilled water gradually upon the filter, until the filtered liquor, including the sugar, measures twenty fluidounces. Lastly, shake the bottle until the sugar is dissolved, and keep it closely stopped.

Liquor guttæ alkalinus.

Ph. Suecica, 1845.

℞ Camboge	℥ij.
Sol. carb. potash	℥ij.

Mix.

Liquor hydrargyri nitrici. *Mercurius nitrosus. Solution of nitrate of mercury.*

Ph. Borussica, 1847.

℞ Purified mercury	℥iv.
Nitric acid	℥iv ℥iss.
Distilled water	℥viij.

Pour four ounces of the nitric acid on the mercury, placed in a porcelain dish, and set it in a cool place until the next day. Separate the crystals with a small quantity of water, to which a twentieth part of nitric acid is added; wash and dry them between bibulous paper, avoiding heat. Then dissolve one ounce of these crystals in the distilled water, to which the remainder (℥ss) of the nitric acid has been added; filter, and, if necessary, add more distilled water, that the sp. gr. may be 1·100. Keep the solution carefully in a close vessel.

Note.—It should be clear and free from nitric-oxide of mercury.

Dubl. Ph. 1850. *Hydrargyri pernitratis liquor.*

℞ Pure mercury	℥ij.
Pure nitric acid	f ℥iss.
Distilled water	f ℥iss.

In the acid, first diluted with the water, dissolve the mercury, with the application of heat, and evaporate the solution to the bulk of 2 ounces and a half.

Liquor morphiæ citratis. *Solution of citrate of morphia.*

Dr. Porter.

℞ Crude opium	℥iv.
Citric acid	℥ij.
Beat together in a mortar, then add boiling distilled water	Oj.

Triturate well together, let them stand for twenty-four hours, and then filter the solution.

Magendie.

℞ Pure morphia . . . . gr. xvj.
Citric acid . . . . . gr. viij.
Distilled water . . . . f ℥j.
Rub them together until dissolved.

Dose.—From 6 to 24 drops in the 24 hours.

Liquor morphiæ acetatis. *Solution of acetate of morphia.*

Lond. Ph. 1851.

℞ Acetate of morphia . . . ℥iv.
Acetic acid . . . . . ♏xv.
Distilled water . . . . Oj.
Proof spirit . . . . . Oss.
Mix and dissolve.

Dubl. Ph. 1850. *Morphiæ acetatis liquor.*

℞ Acetate of morphia . . gr. lxxxij.
Rectified spirit . . . f ℥v.
Distilled water . . . f ℥xv.
Having added the spirit to the water, dissolve the acetate of morphia in the mixture, and, if the solution is not quite clear, pass it through a paper filter.

Liquor morphiæ hydrochloratis. *Solution of hydrochlorate of morphia.*

Lond. Ph. 1851.

℞ Hydrochlorate of morphia . ℥iv.
Distilled water . . . . Oj.
Proof spirit . . . . . Oss.
Mix and dissolve.

Dubl. Ph. 1850. *Morphiæ muriatis liquor.*

℞ Muriate of morphia . . gr. xc.
Rectified spirit . . . f ℥v.
Distilled water . . . ℥xv.
Mix the spirit and water, dissolve the muriate of morphia in the mixture, and, unless the solution be quite clear, pass it through a paper filter.

Edin. Ph. 1841. *Morphiæ muriatis solutio.*

℞ Muriate of morphia . . ℥iss
Rectified spirit . . . . f ℥v.
Distilled water . . . . f ℥xv.
Mix the spirit and water, and dissolve the muriate of morphia in the mixture with the aid of a gentle heat.

Liquor myrrhæ. *Solution of myrrh.*

Ph. Borussica, 1847.

℞ Extract of myrrh . . . . ℥j.
Distilled water . . . . ℥v.
Mix. Pour off the solution, and strain.

Note.—It should be of a brownish-yellow colour and turbid.

Liquor potassæ. *Solution of potash.*

Lond. Ph. 1851.

℞ Carbonate of potash . . ℥xv.
Lime . . . . . ℥viij.
Distilled water, boiling . cong. j.
Dissolve the carbonate of potash in half a gallon of the water. Sprinkle a little of the water upon the lime in an earthen vessel, and the lime being slaked, add the rest of the water. The liquors being immediately mixed together in a close vessel, shake them frequently until they are cold. Then set by [the mixture] that the carbonate of lime may subside. Lastly, keep the supernatant liquor, when poured off, in a well-stopped green-glass bottle.

Note.—The specific weight is 1·063. 6·7 grains of potash are contained in 100 grains. Nothing or almost nothing is thrown down from this solution on solution of lime being added, or, if it has been previously saturated with nitric acid, on either carbonate of soda, or chloride of barium, or nitrate of silver, being added. What is thrown down by bichloride of platinum is yellowish.

Edin. Ph. 1841. *Potassæ aqua.*

℞ Carbonate of potash (dry) . ℥iv.
Lime, recently slaked . . ℥ij.
Water . . . . . f ℥xlv.
Let the lime be slaked, and converted into milk of lime with seven fluidounces of the water. Dissolve the carbonate in the remaining thirty-eight fluidounces of water; boil the solution, and add to it the milk of lime in successive portions, about

an eighth at a time,—boiling briskly for a few minutes after each addition. Pour the whole into a deep narrow glass vessel for twenty-four hours; and then withdraw with a syphon the clear liquid, which should amount to at least thirty-five fluid-ounces, and ought to have a density of 1·072.

Note.—Diluted aqueous solution of potash.—Colourless; sulphuric acid does not occasion effervescence.

Dublin Ph. 1850. *Potassæ Causticæ liquor.*

℞ Pure carbonate of potash. . ℔j.
Fresh burned lime . . . 10oz.
Distilled water . . Cj. and ℥vij.

Slake the lime with 7 ounces of the water. Dissolve the carbonate of potash in the remainder of the water, and having raised the solution to the boiling point in a clean iron vessel, gradually mix with it the slaked lime, and continue the ebullition for 10 minutes with constant stirring. Remove the vessel now from the fire, and when, by the subsidence of the insoluble matters, the supernatant liquor has become perfectly clear, transfer it by means of a syphon to a green glass bottle furnished with an air-tight stopper. The specific gravity of this solution is 1·068.

Use.—Antacid, diuretic, and lithontriptic.

Dose.—♏x to f℥ss.

SYNONYMES.

Lixivium saponarium. — Lond. Ph. 1746.

Aqua kali puri.—Lond. Ph. 1788.

Kali causticum.—Dubl. Ph. 1807.

Liquor potassæ brandishii. *Brandish's solution of potash.*

℞ American pearl ashes . . ℔vj.
Wood ashes (from ash wood) ℔ij.
Quicklime . . . . . ℔ij.
Boiling water . . . . cong. vj.

Add first the lime, then the pearl ashes, and afterwards the wood ashes to the boiling water; mix together; let it stand for 24 hours, and then decant the clear liquor.

Liquor potassæ arsenitis. *Solution of arsenite of potash.* (Lond.) *Liquor arsenicalis.* (Edin. and Dubl.)

Lond. Ph. 1851, and Edin. Ph. 1841.

℞ Arsenious acid,
Carbonate of potash, āā . . ℥iv.
Compound tincture of lavender f℥v.
Distilled water . . . . Oj.

Boil the arsenious acid and carbonate of potash with half a pint of the water in a glass vessel until they are dissolved. Add the compound tincture of lavender to the cooled liquor. Lastly, add, besides, of distilled water as much as may be sufficient, that it may accurately fill a pint measure.

Dubl. Ph. 1850.

℞ Pure arsenious acid,
Pure carbonate of potash, of each . . . . gr. lxxxij.
Compound tincture of lavender . . . . f℥ss.
Distilled water, as much as is sufficient.

Introduce the arsenious acid and carbonate of potash into a flask containing half a pint of water, and boil until a perfect solution is obtained. When this has cooled, add to it the compound tincture of lavender, and as much water as will make the bulk of the entire one pint.

The specific gravity of this solution is 1·013.

Med. Use.—It has succeeded in the cure of intermittents, when bark has failed; in chorea also it has been attended with success occasionally.

Dose.—From min. iv. to min. xx. twice a day. Its use should not be continued for too long a time, as it is apt to accumulate in the system.

SYNONYMES.

Fowler's solution. Mineral solution.

Liquor potassæ carbonatis. *Solution of carbonate of potash.*

Lond. Ph. 1851.

R Carbonate of potash . . . ℥xx.
Distilled water . . . . Oj.

Dissolve the carbonate of potash in the water, and strain.

Note.—Specific gravity 1·473.

Dubl. Ph. 1850. *Potassæ carbonatis liquor.*

℞ Pure carbonate of potash . . ℥x.
Distilled water . . . . Oj.

Dissolve and filter.

The specific gravity of this solution is 1·310.

SYNONYMES.

Liquamen tartari seu oleum tartari per deliquium. Lond. Ph. 1721.

Lixivium tartari. Lond. Ph. 1746.

Aqua kali. Lond. Ph. 1788.

Aqua kali præparati. Lond. Ph. 1788. edit. alt.

Liquor potassæ subcarbonatis. Lond. Ph. 1809, 1824.

Aqua subcarbonatis kali. Dubl. Ph. 1807.

Liquor potassæ chloridis. *Liquor potassæ chlorinatæ. Eau de Javelle. Solution of chloride of potash.*

℞ Dry chloride of lime (chlorinated lime) . . . . ℥ij.
Carbonate of potash (salt of tartar) . . . . . ℥iv.
Water . . . . . Oij.

Mix the chloride of lime with Oiss of the water; dissolve the carbonate of potash in the remainder of the water; mix the two liquors and filter the mixture.

Liquor potassæ citratis. *Solution of citrate of potash.*

U. S. Ph. 1851.

℞ Fresh lemon juice . . . Oss.
Bicarbonate of potash . . q. s.

Add the bicarbonate gradually to the lemon juice till it is perfectly saturated, then filter.

Or,

℞ Citric acid . . . . . ℥ss.
Oil of lemons . . . . ♏ij.
Water . . . . . Oss.
Bicarbonate of potassa . . q. s.

Rub the citric acid with the oil of lemons, and afterwards with the water, till it is dissolved; then add the bicarbonate of potassa gradually till the acid is perfectly saturated; lastly, filter.

Liquor potassæ effervescens. *Effervescing solution of potash.*

Lond. Ph. 1836.

℞ Bicarbonate of potash . . ℥j.
Distilled water . . . . Oj.

Dissolve the bicarbonate of potash in the water; and pass into it, of carbonic acid compressed by force, more than sufficient for saturation. Keep the solution in a well-stopped vessel.

Edin. Ph. 1841. *Potassa aqua effervescens.*

The same as the London formula.

Note.—A solution of bicarbonate of potash, surcharged with carbonic acid. *Kali water.*

Use.—Antacid, diuretic, and lithontriptic.

SYNONYME.

Aqua supercarbonatis potassæ. Edin. Ph. 1839.

Liquor potassii iodidi compositus. *Compound solution of iodide of potassium.*

Lond. Ph. 1851, and Dubl. Ph. 1850.

℞ Iodide of potassium . . . gr. x.
Iodine . . . . . gr. v.
Distilled water . . . . Oj.

Mix, that they may be dissolved.

Edin. Ph. 1841. *Liquor iodinei compositus.*

℞ Iodine . . . . . ℥ij.
Iodide of potassium . . ℥j.
Distilled water . . . . f℥xvj.

Dissolve the iodide and iodine in the water with gentle heat and agitation.

Liquor potassæ silicatis. *Solution of silicate of potash.*

Mix together 1 part of powdered quartz

or fine white sand, and 2 parts of dry carbonate of potash, put the mixture into a hessian crucible, and expose it to a white heat until the ingredients are fused; put the fused mass into a shallow vessel, and expose it in a damp place until it has become liquid.

Liquor probatorius chlorometricus.

Codex Medic. Hamberg. 1845.

℞ Vitrified arsenious acid .	gr. lxviij.
Muriatic acid concentrated	ʒj.
Distilled water, sufficient to make	ʒxxxij.

Dissolve the arsenious acid in the muriatic acid and add the water. With this solution fill a graduated tube of 1000 gr. measure; pour it into a glass, and add a few drops of solution of indigo; then fill the tube with the fluid containing chlorine to be tested, and add the latter to the former, until the blue colour has disappeared. The number of parts of chlorine fluid used, indicates the per centage of the chlorine contained in it.

Liquor pyrotartaricus. *Pyrotartaric liquor.*

Ph. Slesvico-Holsat. 1831.

Half fill an iron or earthen retort with cream of tartar, and submit to distillation at an augmenting temperature, attaching a large receiver and safety tube. The distilled liquor is separated from the empyreumatic oil by filtration, and kept for use. The residue in the retort is made into carbonate of potash.

Note.—Clear, reddish-brown, having a sourish and empyreumatic taste and smell; scarcely heavier than water; when evaporated, it yields crystals, which are easily sublimed.

Liquor rhei. *Concentrated infusion of rhubarb.*

This may be made in the same way as the liquor calumbæ, substituting rhubarb for calumba, in the proportion indicated by the formula for *Infusum rhei.*

Liquor saponis stibiatæ. *Tinctura Antimonii saponata.*

Ph. Græca, 1837.

℞ Golden sulphuret of antimony	1 part.
Boiling caustic potash . .	3 parts.
Spanish soap, scraped . .	3 „
Rectified spirit	6 „
Distilled water	6 „

Macerate at a gentle heat, and filter.

Note. — Clear, yellowish-brown. Sp. gr. 1·100 to 1·110.

Liquor sennæ. *Essence of senna. Fluid extract of senna. Concentrated infusion of senna.*

Macerate ℔ij of small or broken senna leaves, and ʒij ʒiss of bruised ginger, with ℔iv of tepid water, temperature 120°, for 24 hours, frequently stirring it up forcibly with a wooden mash-stick; then press out the liquor with a powerful press. Add ℔iv more of tepid water to the pressed marc, and repeat the maceration and pressing. Mix the liquors; let them stand for some hours that the dregs may subside, then decant the clear portion, and evaporate it until it shall measure fʒxxviij. Add to this fʒiv of rectified spirit.

This will be eight times the strength of compound infusion of senna. fʒj, mixed with fʒvij of water, is sometimes substituted for *Infusum sennæ compositum.*

Liquor sodæ. *Solution of soda.*

Lond. Ph. 1851.

℞ Carbonate of soda . . .	ʒxxxj.
Lime	ʒix.
Boiling distilled water . .	Cj.

Prepare the solution in the same manner as is directed concerning solution of potash.

The specific gravity is 1·061. 4 grains of soda are contained in 100 grains.

This solution corresponds to solution of potash as regards the other tests noted above, the last being excepted.

Dubl. Ph. 1851. *Sodæ causticæ liquor.*

℞ Crystallized carbonate of soda of commerce . ℔ij.
Fresh burned lime . . ℥x.
Distilled water . . . Cj and ℥vij.

Slake the lime with 7 ounces of the water. Dissolve the carbonate of soda in the remainder of the water, and having raised the solution to the boiling point in a clean iron vessel, gradually mix with it the slaked lime, and continue the ebullition for 10 minutes with constant stirring. Remove the vessel now from the fire, and when, by the subsidence of the insoluble matters, the supernatant liquor has become perfectly clear, transfer it by means of a syphon to a green glass bottle, furnished with an air-tight stopper.

The specific gravity of this solution is 1·056.

Sodæ carbonatis liquor. *Solution of carbonate of soda.*

Dubl. Ph. 1850.

℞ Crystallized carbonate of soda of commerce . . . . ℥iss.
Distilled water . . . . Oj.

Dissolve and filter.

The specific gravity of this solution is 1·026.

Liquor sodæ chlorinatæ. *Liquor sodæ chloridis. Solution of chlorinated soda. Solution of chloride of soda. Labarraque's disinfecting solution.*

Lond. Ph. 1851.

℞ Carbonate of soda . . . ℔j.
Distilled water . . . . f℥xlviij.
Chloride of sodium . . . ℥iv.
Binoxide of manganese . . ℥iij.
Sulphuric acid . . . . ℥iiss.

Dissolve the carbonate of soda in 2 pints of the water; then put the chloride of sodium and binoxide of manganese, rubbed to powder, into a retort, and add to them the sulphuric acid, previously mixed with 3 fluidounces of the water and cooled. Heat (the mixture) and pass the chlorine first through 5 fluidounces of the water, and afterwards into the solution of carbonate of soda above directed.

Note.—At first the colour of turmeric is altered to brown in this solution, afterwards it is destroyed. When dilute hydrochloric acid is added, carbonic acid and chlorine are evolved together; solution of sulphate of indigo is decolorized by the latter: lime is precipitated from lime-water by the former.

Dubl. Ph. 1850. *Sodæ chlorinatæ liquor.*

℞ Chlorinated lime . . . . ℔ss.
Water . . . . . Css.
Crystallized carbonate of soda of commerce . . . . ℥vij.

Blend well by trituration in a mortar the chlorinated lime with three pints of the water, and, having transferred the mixture to a stopped bottle, let this be well shaken several times for the space of 3 hours. Pour out the contents of the bottle on a calico cloth, and to the filtered solution add the carbonate of soda dissolved in the remaining pint of water. Having stirred the mixture well for 10 minutes, separate the liquid by a second filtration, and preserve it in a well-stopped bottle. The specific gravity of this liquid is 1·034.

It may be also made as follows:—

℞ Chloride of lime (chlorinated lime) . . . . . ℥ij.
Carbonate of soda . . . ℥iv.
Water . . . . . Oij.

Mix the chloride of lime with Oiss of the water; dissolve the carbonate of soda in Oss of water; mix the liquors and filter the mixture.

Med. Use.—A disinfecting liquid. Used as a lotion for cancerous ulceration of the breast, corrosive tetter, and gangrenous ulcer.

Dose.—Twenty-five or thirty drops in a pint of barley-water; as an external ap-

plication, one pint to ten or fifteen pints of water.

SYNONYMES.

Chloruret of the oxide of sodium.
Oxymuriate of soda.

Liquor sodæ effervescens. *Effervescing solution of soda.*

Lond. Ph. 1836.

℞ Sesquicarbonate of soda . . ʒj.
Distilled water . . . . Oj.

Dissolve the carbonate of soda in the water, and pass into it, compressed by force, more carbonic acid than is sufficient for saturation. Keep the solution in a well-stopped vessel.

Note.—The blue colour of litmus at first reddens in this solution: it returns when heated, after the effervescence has ceased.

Edin. Ph. 1841. *Aqua sodæ effervescens.*

℞ Bicarbonate of soda . . . ʒj.
Water . . . . . Oj.

Dissolve the bicarbonate in the water, and saturate it with carbonic acid under strong pressure. Preserve the liquid in well-closed vessels.

Note.—This is a solution of bicarbonate of soda, surcharged with carbonic acid. *Soda water.*

Use.—The purposes for which soda water is ordinarily taken are well known.

SYNONYME.

Aqua supercarbonatis sodæ. Edin. Ph. 1839.

Liquor stypticus. *Styptic liquor.*

Ph. Slesvico-Holsat. 1831.

℞ Sulphate of copper,
Alum, āā . . . . . ℥iss.
Sulphuric acid . . . . ʒj.
Water . . . . . ℔j.

Mix and filter.

Liquor taraxaci. *Extractum taraxaci fluidum. Fluid extract of dandelion.*

Macerate ℔iv of dandelion roots, previously cleaned, sliced, and dried, in enough cold water to cover them, for 24 hours: then press out the liquor, heat it to the boiling point, filter it while hot, evaporate the clear liquor by the heat of a water-bath, by spontaneous evaporation, or in *vacuo*, until reduced to fʒxxxvj. Add to this fʒxij of rectified spirit.

Liquor volatilis cornu cervi. *Spiritus volatilis cornu cervi. Spirit of hartshorn.*

This name was originally applied to the watery liquor obtained when harts' horns were submitted to destructive distillation. It consisted of a solution of carbonate of ammonia, contaminated with empyreumatic oil. A similar liquor is now obtained in the distillation of bones, in making animal charcoal, and this liquor is used as one of the sources of the ammonia of commerce. The liquid now sold as spirit of hartshorn is either a weak solution of ammonia, or a solution of carbonate of ammonia, or a mixture of the two.

Zinci chloridi liquor. *Solution of chloride of zinc.*

Dubl. Ph. 1850.

℞ Sheet zinc. . . . . ℔j.
Muriatic acid of commerce,
Water, of each Oiiss, or as much as may be sufficient.
Solution of chlorinated lime . fʒj.
Prepared chalk . . . . ʒj.

To the zinc, introduced into a porcelain capsule, gradually add the muriatic acid, applying heat, until the metal is dissolved. Filter the liquid through calico, and, having added to it the solution of chlorinated lime, concentrate at a boiling temperature, until it occupies the bulk of 1 pint. Permit the solution now to cool down to the temperature of the air, place it in a bottle with the chalk, and, having first added distilled

water, so that the bulk of the whole may be a quart, shake the mixture occasionally for 24 hours. Finally, filter, and perserve the production in a well-stopped bottle.

The specific gravity of this liquor is 1·593.

Litmus. *Lacmus. Turnsole.*

A blue pigment supposed to be obtained from *Rocella tinctoria*, or *Lecanora tartarea*. The process by which it is made is not known, but it is thought to be similar to that for making *orchil*, except that carbonate of lime is used to form a paste which is subsequently dried.

Lixivium. (From *lix*, formerly signifying water or liquor in general.)

A liquor obtained from ashes, or from saline matter, the whole of which is not soluble.

Loadstone. *Lapis heraclius. Lapis sideritis. Lapis nauticus. Magnes.*

An ore of iron which possesses the peculiar properties of attracting iron, and of turning one of its poles towards the north, when freely suspended.

Look album. *Looch blanc. White emulsion.*

Codex. Ph. Franç. 1839.

℞ Sweet almonds, deprived of their external coat .	℥ij ʒij.
Bitter almonds, ditto ditto	ʒij.
White sugar	℥ij.
Oil of almonds . . .	℥ij.
Gum tragacanth, powdered,	℈ij gr. xiv.
Orange-flower water . .	ʒij.
Water	℔j ℥iij ʒv.

Make an emulsion with the almonds, the water, and almost the whole of the sugar. Mix the tragacanth with the remainder of the sugar, and add it gradually to a part of the emulsion, so as to form a rather clear mucilage. Then add the oil of almonds by degrees, and beat them together briskly for some time; finally, dilute it with the remainder of the emulsion and the orange-flower water.

Look oleosum. *Looch huileux. Oily emulsion.*

Codex, Ph. Franç. 1839.

℞ Oil of almonds	℥ss.
Gum arabic, powdered . .	℥ss.
Syrup of marsh-mallow .	℥j.
Orange-flower water . .	℥ss.
Water	℥iij.

Make a mucilage with the gum and part of the water; add the oil gradually, and diffuse it equally by prolonged trituration, and then dilute the emulsion with the rest of the liquids.

Lotio.

A lotion or wash; a liquid remedy, intended for external application. This generic term comprehends embrocations, fomentations, liniments, collyria, &c.

Lupulina. *Lupuline. Lupulinic grains.*

These are obtained by rubbing the strobiles of the *Humulus lupulus* over a sieve, when the lupulinic grains pass through. They may be further purified by winnowing.

The term *Lupuline* is sometimes applied to the bitter principle obtained by treating an aqueous extract of the *Lupulinic grains* united with a little lime, with alcohol, evaporating the alcoholic tincture to dryness, and washing it with ether. The residue is *Lupuline*, or *Lupulite*.

Macaroni.

A dried paste or dough, made of wheat flour from which some of the starch has been separated. It is either in pipes, about the size of a goose-quill, or in flat strips, or riband-shaped pieces. It is a favourite article of diet among the Italians.

Magistery.

A term formerly applied to white pre-

cipitates, apparently spontaneously formed, as in the dilution of metallic solutions with water.

MAGNESIA. *Symb.* MgO. *eq.* 20.

This, which is one of the alkaline earths, is the oxide of a metal, magnesium. It is used in medicine under the popular name of *Calcined magnesia*. The Colleges direct it to be prepared as follows:—

Magnesia. Calcined magnesia.

Lond. Ph. 1851.

℞ Carbonate of magnesia . . ℔j.

Burn with a sharp fire for 2 hours. Moistened with water it slightly changes the colour of turmeric into red: it is dissolved in hydrochloric acid without effervescence. Nothing is thrown down from this solution on either bicarbonate of potash, or chloride of barium being added.

Edin. Ph. 1841.

Take any convenient quantity of carbonate of magnesia, expose it in a crucible to a full red heat for two hours, or till the powder, when suspended in water, presents no effervescence on the addition of muriatic acid. Preserve the product in well-closed bottles.

Note.—Fifty grains are entirely soluble, without effervescence, in a fluidounce of muriatic acid; an excess of ammonia occasions in the solution only a scanty precipitate of alumina: the filtered fluid is not precipitated by solution of oxalate of ammonia.

Dubl. Ph. 1850.

℞ Carbonate of magnesia, any convenient quantity.

Introduce it into a clay crucible closed loosely by a lid, and let this be exposed to a low red heat as long as a little of the magnesia, taken from the central part of the crucible, when cooled, and dropped into dilute sulphuric acid, continues to give rise to effervescence. Let the product be preserved in well-closed bottles.

SYNONYMES.

Magnesia usta. — Lond. Ph. 1788. Dubl. Ph. 1807.

MAGNESIA CALCINATA PONDEROSA. *Heavy calcined magnesia.*

Phillips.

Dissolve 123 parts of crystallized sulphate of magnesia in boiling water. Dissolve 144 parts of crystallized carbonate of soda in boiling water. Mix the two solutions, and evaporate the mixture to dryness. Calcine the dry residue in a crucible for two hours, or until the whole of the carbonic acid is expelled; then treat the powder which remains with water until the whole of the soluble salt is removed, and dry the residue.

The magnesia thus obtained will be much more dense than that prepared by the preceding processes.

MAGNESIÆ CARBONAS. *Carbonate of magnesia.*

Lond. Ph. 1851.

℞ Sulphate of magnesia . ℔iv.
Carbonate of soda . ℔iv. and ℥ix.
Boiling distilled water . Civ.

Dissolve the carbonate and sulphate separately in two gallons of the water, and strain; then mix the solutions, and boil, constantly stirring with a spatula, for 2 hours, distilled water being frequently added that it may fill nearly the same measure. Lastly, the solution being poured off, wash the precipitated powder with hot distilled water, and dry.

Note.—It is dissolved in diluted sulphuric acid; nothing is thrown down from this solution, when the effervescence has ceased, by bicarbonate of potash. Water in which it has been boiled does not change the colour of turmeric into brown, nor does it throw down anything, either chloride of barium or nitrate of silver being added.

Edin. Ph. 1841.

℞ Sulphate of magnesia . ℔iv.
Carbonate of soda . ℔iv. and ℥viij.
Water . . . . . Civ.

Dissolve the salts separately, each in 2 gallons of the water; mix the solutions, boil the mixture, and stir briskly for 15 or 20 minutes. Collect the precipitate on a

filter of calico or linen, wash it thoroughly with boiling water, and then dry it.

Dubl. Ph. 1850.

℞ Sulphate of magnesia of commerce . . . . . ℥x.
Crystallized carbonate of soda of commerce . . . . ℥xij.
Distilled water, a sufficient quantity.

Dissolve each salt in 2 quarts of water, mix the two solutions cold, and boil the mixture for 10 minutes. Transfer the precipitate to a calico filter, and pour upon it, repeatedly, boiling water, until the washings cease to give a precipitate with a solution of nitrate of barytes. Lastly, dry by a heat not exceeding 212°.

SYNONYMES.

Magnesia alba.—Lond. Ph. 1788.
Magnesiæ subcarbonas.—Lond. Ph. 1824.
Magnesia.—Dubl. Ph. 1807.
Comitissæ palmæ pulvis.

Magnesiæ carbonas ponderosum. *Heavy carbonate of magnesia.*

Dubl. Ph. 1850.

℞ Sulphate of magnesia of commerce . . . . . ℥x.
Crystallized carbonate of soda of commerce . . ℥xij.
Boiling distilled water, a sufficient quantity.

Dissolve the sulphate of magnesia in half a pint, and the carbonate of soda in a pint of the water, mix the two solutions, and evaporate the whole to dryness by means of a sand heat. Digest the residue for half an hour with one quart of boiling distilled water, and having collected the insoluble matter on a calico filter, treat it repeatedly with warm distilled water, until the washings cease to give a precipitate when suffered to drip into a solution of nitrate of barytes. Finally, dry the product at a heat not exceeding 212°.

Phillips.

Dissolve 123 parts of crystallized sulphate of magnesia in boiling water. Dissolve 144 parts of crystallized carbonate of soda in boiling water. Mix the two solutions and evaporate the mixture to dryness; then treat the residue with water until the whole of the soluble salt is removed, and dry the powder which remains.

This powder will be much more dense than that prepared according to the processes of the Pharmacopœias.

Med. Use.—Acts as an antacid, and should it meet an acid in the alimentary canal, it purges.

Dose.—Gr. x. to ℈ij.

Magnesiæ citras. *Citrate of magnesia.*

Made by saturating solution of citric acid with carbonate of magnesia. It is soluble in water when a slight excess of citric acid is present. It is said to be free from the bitter taste common to most of the other salts of magnesia.

Magnesiæ citras effervescens. *Effervescing citrate of magnesia.*

℞ Citric acid, dry and powdered . . . . . 14 parts.
Carbonate of magnesia, pure and dry . . . 10 parts.
Mix, and preserve in bottles.

Solutio magnesiæ citratis. *Solution of citrate of magnesia. Seidlitz water free from bitterness.*

Delabarre.

℞ Citric acid . . . . 463 grains.
Calcined magnesia . . 93 „
Water . . . . . ℥iv.
Syrup of orange . . ℥v

Add the magnesia to the citric acid dissolved in the water, and when combination is effected, filter the solution and add the syrup. Put this into a bottle holding Oiss, and fill it up with a solution made as follows:—

Precipitate 185 grains of sulphate of magnesia with a sufficient quantity of carbonate of soda; collect the precipitate

on a filter, wash it, mix it with ℥xv of water in a suitable vessel, and pass carbonic acid gas through it until the magnesia is dissolved.

Med. Use.—This has been recommended as a very agreeable and efficacious saline purgative.

Magnesiæ hydrochloras. *Hydrochlorate of magnesia.*

Codex Ph. Franç. 1839.

Add hydrochloric acid to carbonate of magnesia diffused through water, until a neutral solution is obtained, having a slight excess of magnesia. Filter the solution, and evaporate it until crystals shall form on cooling. It is a deliquescent salt.

Magnesia muriatica. *Muriate of magnesia.*

Ph. Cast. Ruthena, 1840.

℞ Sulphate of magnesia . . 2 parts.
Common salt . . . . 1 part.

Dissolve in 4½ parts of boiling water; evaporate it to 4 parts and let it cool. Then remove the crystallized sulphate of soda, and evaporate the fluid to dryness.

Magnesiæ sulphas. *Sulphate of magnesia. Epsom salt.*

No. 1.

Magnesian limestone, or *Dolomite*, is heated with dilute sulphuric acid, until the carbonates are converted into sulphates of lime and magnesia. The latter of these is then separated by solution and crystallization.

No. 2.

Bittern, the residual liquor of sea-water, from which the common salt has been separated, is considerably concentrated, the chloride of sodium which is deposited during the concentration being removed, the liquor is then allowed to crystallize. The rough crystals thus obtained are called *Single Epsom salts*. When recrystallized, they are called *Double Epsom salts*.

Lond. Ph. 1836.

Note.—Very readily dissolved by water. Sulphuric acid dropped into the solution does not expel any hydrochloric acid. One hundred grains dissolved in water, and mixed with a boiling solution of carbonate of soda, yield 34 grains of carbonate of magnesia when dried.

SYNONYMES.

Bitter purging salt. Sal Anglicum. Sal seidlitzense. Sal catharticum. Vitriolated magnesia.

Manganesium. *Manganese.*

Symb. Mn. *eq.* 27·6.

A hard, brittle, greyish-white metal. Sp. gr. about 8. It is obtained from the oxide, by exposing it to an intense heat, mixed with charcoal.

Manganesii peroxidum. *Peroxide of manganese. Black oxide of manganese. Magnesia nigra. Black magnesia.*

This is an abundant mineral product.

It is found in large quantities in the West of England. The blackest samples are esteemed the best. It is used as a source of oxygen gas, and for producing chlorine from hydrochloric acid. It is also used in small quantities for rendering glass colourless; in larger quantities it gives it a purple colour.

Lond. Ph. 1836.

Note.—Soluble in hydrochloric acid, evolving chlorine. What is thrown down from the solution by potash is at first white, and soon becomes brown; it rarely also happens that ferrocyanide of potassium does not render it green. When first dried, and afterwards heated to whiteness, 100 parts lose 12.

Manganesii sulphas. *Sulphate of manganese.*

This salt is prepared on the large scale in the following manner:—Peroxide of manganese is mixed with coals, and the mixture heated to redness in a close vessel. The impure protoxide thus obtained is dissolved in sulphuric acid, and

a little hydrochloric acid added towards the end of the process. The solution is evaporated to dryness, and the residue heated to redness to decompose the salts of iron that may be present. It is now treated with boiling water, which dissolves the sulphate of manganese, and on cooling or by spontaneous evaporation, this salt will crystallize out in large rose-coloured crystals.

Med. Use.—It is given in doses of a drachm or two drachms, dissolved in half a pint of water, as a cathartic, and for promoting bilious evacuations. It has been recommended by Mr. Alexander Ure as a remedy for gout.

Mannita. *Mannite. Manna sugar. Mushroom sugar.* $C^6H^7O^6$.

Melt six pounds of common manna (sorts) over the fire with about half its weight of rain-water, in which the white of an egg has been previously beaten; boil them together for a few minutes, and then strain the mixture through a linen cloth. The strained liquid will solidify on cooling. It will present the following characters; it will be a pale-brown mass, which, on triturating it, will become pulpy, and somewhat similar to common honey. Submit this mass to strong pressure in a cloth; mix the pressed cake with its own weight of cold water, and again press it. The pressed cake is now to be dissolved in boiling water, some animal charcoal added, and the mixture filtered into a porcelain dish placed over the fire, and the clear solution evaporated to a pellicle, and then put to crystallize.

It will form quadrangular prisms, perfectly white and transparent, and larger than when crystallized from spirit. It is incapable of undergoing fermentation.

Marasquina.

A liqueur made with Morello cherries.

Marmalade. (From *Marmello*, Portuguese, *a quince.*)

Properly a conserve of quinces. The term, however, is applied to conserves of a variety of fruits, especially oranges, which are cut into thin slices, and preserved in a strong syrup.

Marmor. *Marble.*

Lond. Ph. 1836.

Note.—White, dissolves in hydrochloric acid with effervescence. Ammonia throws down nothing from this solution, nor is it decomposed by the addition of a solution of sulphate of lime in water.

Edin. Ph. 1841.

Note.—A neutral solution in diluted nitric acid, precipitated by an excess of oxalate of ammonia, and filtered, yields no white precipitate with phosphate of ammonia.

Massicot.

The oxide which forms on melted lead exposed to a current of air, and calcined until it acquires a yellow colour.

Masticatoria. *Masticatories. Pilæ masticatoriæ.*

Medicines taken by chewing; used chiefly as stimulants.

No. 1.

Quincy.

℞ Mastic	ʒiij.
Pellitory of Spain root	ʒij.
Stavesacre seeds	ʒij.
Angelica root	ʒss.
Cubebs, Nutmegs, āā	ʒj.

White wax, q. s. to form into balls.

No. 2.

Augustin.

℞ Mastic, White wax,
Pellitory of Spain root, āā . ʒss.

Mix; form into a paste with heat, and divide into three balls.

In India, a mixture of betel leaf, areca nut, and lime, is used as a masticatory.

The principal masticatory at present used in this country is pigtail or shag tobacco.

Matches, for obtaining instantaneous light by chemical action

Chlorate matches.

No. 1.

℞ Chlorate of potash . ℈ij.
White sugar . . . gr. xij.
Sulphur . . . . gr. viij.
Powdered tragacanth . gr. iv.
Vermilion . . . . . gr. vj.

Reduce the ingredients separately to powder, mix them together, form them into a paste with water, dip the ends of the matches into the paste, and dry them.

No. 2.

℞ Chlorate of potash . . . ʒj.
Sulphur . . . . . gr. vj.
White sugar . . . . gr. vj.
Powdered gum arabic . . gr. v.
Golden sulphuret of antimony . . . . . gr. v.

Mix into a paste with water, and apply as No. 1.

These matches ignite on being dipped into a bottle containing asbestos wetted with strong oil of vitriol.

Congreve or lucifer matches.

No. 1.

℞ Gum arabic . . . . 16 parts.
Phosphorus, powdered . 9 ,,
Nitrate of potash . . . 14 ,,
Black oxide of manganese 18 ,,

Made into a paste with water, and the matches dipped into it.

No. 2.

℞ Phosphorus . . . . 4 parts.
Nitrate of potash . . . 10 ,,
Glue . . . . . 6 ,,
Red lead . . . . . 5 ,,
Smalt . . . . . 2 ,,

The glue is first soaked in cold water, then put into a heated mortar, so as to liquefy it, the phosphorus is then added, then the nitre, red lead, and smalt, and the whole mixed into a homogeneous mass, the temperature being never allowed to exceed 167° Fah. The matches are dipped into this paste, and then dried.

These matches ignite on being rubbed over a rough surface.

The phosphorus may be reduced to a state of minute division, suitable for use in these preparations, by putting it into a flask or bottle with some spirit, immersing the bottle in hot water, until the phosphorus is melted, then briskly agitating it until cold.

Maydew. *Ros majalis.*

The dew collected off the grass with sponges; used as a cosmetic.

Mead.

An old English liquor made from honeycombs after the honey has been drained out, by boiling them in water, and then fermenting.

Medicamenta arcana. *Patent or proprietary medicines.*

Alexander's remedy for gout.

℞ Hermodactyls,	Cummin seed
Ginger	Aniseed,
Pepper	Scammony

(Paris.)

Anderson's pills.

℞ Barbadoes aloes, jalap, and oil of aniseed. (Paris.)

Asthmatic elixir.

℞ Opium . . . . . ʒj.
Camphor . . . . . ʒv.
Oil of anise . . . . . ℥j.
Proof spirit . . . . cong. j.

Bacher's tonic pills.

℞ Extract of hellebore . . . ℥ss.
Myrrh . . . . . ℥ss.
Powdered carduus benedictus . ʒiij.

Made into pills, gr. j. each. (Paris.)

Barclay's antibilious pills.

℞ Extract of colocynth . . ʒij.
Resin of jalap . . . ʒj.
Soap . . . . . ʒiss.
Guaiacum . . . . ʒiij.
Potassio-tart. of antimony grs. viij.
Essential oil of juniper, Caraway, rosemary, āā . gtt. iv.
Syrup of buckthorn . . q. s.

To be divided into 64 pills. (Paris.)

Bates' anodyne balsam. Balsamum anodynum.

No. 1.

℞ White soap . . . . . ʒiv.
Opium . . . . . ʒj.
Camphor . . . . . ʒij.
Oil of rosemary . . . . ʒss.
Spirit of wine . . . . ℔ij.

No. 2.

℞ Castile soap,
Camphor, āā . . . . ʒij.
Opium . . . . . ʒiv.
Saffron . . . . . ʒj.
Spirit of wine . . . . ʒxviij.

Bateman's pectoral drops.

℞ Tincture of castor, camphor, and opium flavoured with aniseed, and coloured by cochineal. (Paris.)

Battley's sedative solution of opium. Liquor opii sedatives.

This nostrum has been extensively used for many years. It is considered by many medical men to be less stimulating and more purely narcotic than laudanum. Its composition and mode of preparation have not been made public, but it is believed to be made by evaporating a cold aqueous solution of opium at a low temperature, redissolving the residue in distilled water, and again evaporating; then diluting the extract thus formed with water, and adding as much spirit as will prevent decomposition. The strength of the liquor is made about equal to that of laudanum, and it is given in nearly the same doses.

The object of the process is to get rid of the resin, and some other constituents of the opium, which are rendered insoluble during the evaporation.

Black drop.

Dr. Armstrong.

℞ Opium . . . . . ℔ss.
Nutmegs . . . . . ʒiss.
Saffron . . . . . ʒss.
Verjuice . . . . . Oiij.

Boil to a proper consistence, then add ʒij. of yeast, set it in a warm place for six or eight weeks, then in the open air until it acquires the consistence of a syrup, when it is to be decanted, filtered, and bottled up with a little sugar added to each bottle. One drop is equal in strength to three drops of laudanum.

Blaine's powder for the distemper in dogs.

The basis of this preparation is the aurum musivum, or sulphuret of tin. (Paris.)

Chelsea pensioner.

℞ Guaiacum . . . . . ʒj.
Rhubarb . . . . . ʒij.
Bitartrate of potash . . ʒj.
Sulphur . . . . . ʒij.
Nutmeg . . . . . No. 1.
Honey . . . . . ℔j.

or q. s. to form an electuary.

Ching's worm lozenges.

(*Yellow lozenges.*)

Boil ʒss of saffron in Oj. of water, and strain; then add ℔j. of calomel, and ℔xxviij. of white sugar, mix them well together, and add mucilage of tragacanth enough to form a lozenge paste, to be divided into lozenges containing gr. j. of calomel each.

(*Brown Lozenges.*)

℞ Calomel . . . . . ʒviij.
Resin of jalap . . . . . ℔ijss.
White sugar . . . . . ℔ix.
Mucilage of tragacanth . q. s.

Mix. and make into lozenges, each containing gr. ss. of calomel. (Paris.)

Dr. Chittick's remedy for stone.

This consisted of a fixed alkali administered in veal broth. (Paris.)

Daffy's elixir.

℞ Senna . . . . . ℔ss.
Jalap, sliced,
Aniseed,
Caraway seed, āā . . ʒj. ʒij.
Juniper berries . . . ʒiiss.
Proof spirit . . . . Ovj

Macerate for 14 days, then add,

Treacle	℥xss.
Water	℔j. ℥v.

Mix and strain.

Dalby's carminative.

℞ Carbonate of magnesia	ʒij.
Oil of peppermint	♏j.
Oil of nutmegs	♏ij.
Oil of aniseed	♏iij.
Tincture of castor	♏xxx.
Tincture of assafœtida	♏xv.
Tincture of opium	♏v.
Spirit of pennyroyal	♏xv.
Compound tincture of cardamoms	♏xxx.
Peppermint water	f℥ij.

Mix.

Davidson's remedy for cancer.

Arsenious acid and powdered hemlock. (Paris.)

Dinner pills. Lady Webster's pills. Lady Crespigny's pills. Lady Hesketh's pills.

℞ Aloes	ʒvj.
Mastich and red rose leaves, āā	ʒij.
Syrup of wormwood	q. s.

Divide into pills grs. iij each. (Paris.)

Dixon's antibilious pills.

℞ Aloes, scammony, rhubarb, and potassio-tartrate of antimony. (Paris.)

Dupuytren's pommade for the hair.

℞ Beef marrow	ʒxvij.
Nervine balsam	ʒxvij.
Rose oil	ʒij.
Alcoholic extract of cantharides	gr. vj.

Dissolve the extract of cantharides in a little spirit, and mix it with the fatty matter previously melted. (Soubeiran.)

Dutch drops, or *Haerlem drops.*

The basis of this nostrum consists of the residue left in the still after the re-distillation of oil of turpentine; this is a thick, red, resinous matter, to which the name balsam of turpentine has been given. A preparation, however, is frequently vended as "*Dutch drops,*" which is a mixture of oil of turpentine, tincture of guaiacum, spirit of nitric ether, with small portions of the oils of amber and cloves. (Paris.)

Dutch remedy for ague.

℞ Peruvian bark, powdered,	
Cream of tartar, āā	ʒj.
Cloves, powdered	ʒss.

Mix, and give ʒiss every three hours. (Paris.)

Eaton's styptic

Consists chiefly of an alcoholic solution of sulphate of iron, with some unimportant additions. Helvetius's stypic was for a long time employed under this title. (Paris.)

Essence of coltsfoot.

Equal parts of balsam of tolu and compound tincture of benzoin, to which is added double the quantity of rectified spirits. (Paris.)

The everlasting pill.

A pill consisting of metallic antimony was formerly administered under this name, and was said to have the property of purging as often as swallowed.

Faynard's powder for hæmorrhage.

Charcoal of beechwood finely powdered. (Paris.)

Ford's balsam of horehound.

R Horehound herb,	
Liquorice root, āā	℔iijss.
Water	Oviij.

Infuse for twelve hours, then strain off Ovj, to which add,

Camphor	ʒj. ʒij.
Opium,	
Benzoin, āā	ʒj.
Dried squills	ʒij.
Oil of aniseed	ʒj
Proof spirit of brandy	Oxij.

Macerate for a week, then add
Honey . . . . . ℔iijss.
Mix and strain.

Fothergill's pills.

℞ Aloes,
Scammony,
Colocynth.
Oxide of antimony.
(Paris.)

Freeman's bathing spirits.

No. 1.

℞ Soft soap . . . . . ℔vj.
Camphor . . . . . ʒviij.
Spirit of wine,
Water, āā . . . . . cong. iij.
M.S.A.

No. 2.

℞ Soft soap . . . . . ʒxij.
Camphor . . . . . ʒij.
Carbonate of potash . . ʒss.
Proof spirit . . . . . Oxiv.
Daffy's elixir . . . . . ʒiv.
Mix.

Godfrey's cordial.

℞ Treacle . . . . . ℔vij.
Water . . . . . Oviij.
Tincture of opium . . . ʒiv.
Rectified spirit . . . . . ʒvj.
Oil of sassafras . . . . ʒss.
Mix.

Gowland's lotion.

℞ Bichloride of mercury . . gr. iss
Emulsion of bitter almonds ʒj.
(Paris.)

Greenhough's tincture for the teeth.

℞ Bitter almonds . . . . ʒij.
Brazil wood,
Florentine orris root, āā . ʒij.
Cochineal,
Salt of sorrel,
Alum, aā . . . . . ʒj.
Spirit of wine . . . . . Oij.
Spirit of scurvy grass . . ʒiv.
Mix.

Guy's powder of Ethiopia.

℞ Pure rasped tin,
Mercury,
Sublimed sulphur.
Triturated together, and used as an anthelmintic. (Paris.)

Hatfield's tincture.

℞ Guaiacum and soap (equal parts). . . . . ʒij.
Rectified spirit . . . . Oiss.
(Paris.)

Helvetius's powder. Pulvis Helvetii.

℞ Alum,
Dragon's blood.
(Paris.)

Helvetius's styptic.

Iron filings and cream of tartar, mixed to a proper consistence with French brandy.
(Paris.)

Herrenschwand's specific.

℞ Gamboge . . . . . grs. x.
Carbonate of potash . . grs. xx.
(Paris.)

Hill's balsam of honey.

No. 1.

℞ Balsam of Tolu. . . . ℔j.
Honey . . . . . ℔j.
Rectified spirit . . . . cong. j.

No. 2.

℞ Balsam of Tolu . . . . ʒij.
Styrax . . . . . ʒij.
Opium . . . . . ʒss.
Honey. . . . . ʒviij.
Rectified spirit . . . . . Oij.
Pectoral,—used in coughs and colds.

Hill's essence of bardona.

℞ Guaiacum . . . . . ʒj.
Spirit . . . . . ʒiij.
(Paris.)

Hooper's pills.

℞ Pil. aloes cum myrrha,
Sulphate of iron,
Canella,
Ivory black. (Paris.)

Jackson's bathing spirits.

℞ Soft soap . . . . . ℔ij.
Camphor . . . . . ʒxij.
Oil of rosemary,
Oil of thyme, āā . . . ʒiss.
Spirits of wine. . . . cong. ij.

James's analeptic pills.

℞ James's powder,
Gum ammoniacum,
Pil. aloes cum myrrha, equal parts.
Tincture of castor . . q. s.
(Paris.)

Jesuit's drops. Balsamum polychrestum. Elixir antivenereum.

℞ Guaiacum . . . . . ʒvij.
Peruvian balsam . . . . ʒiv.
Sarsaparilla . . . . . ʒv.
Spirit of wine . . . . . Oiij.
Macerate and strain.

Kirkland's neutral cerate.

℞ Lead plaster . . . . . ʒviij.
Olive oil . . . . . ʒiv.
Melt, and, while fluid, add
Prepared chalk . . . . ʒiv.
Stir until sufficiently cooled, then add,
Acetic acid . . . . . f ʒiv.
Acetate of lead . . . . ʒiij.
Mix. (Paris.)

Kirkland's lotion of myrrh.

℞ Tincture of myrrh,
Lime water, āā. . . . p. æ.

Madame Nouffleur's remedy for tapeworm.

℞ Three drachms of the root of the male fern, reduced to fine powder, and mixed with water; this constitutes one dose. Two hours after taking the powder, a bolus of calomel, scammony, and gamboge, is to be administered.
(Paris.)

Marriott's dry vomit.

Equal parts of emetic tartar and sulphate of copper. (Paris.)

Marshall's cerate.

℞ Palm oil . . . . . ʒv.
Calomel . . . . . ʒj.
Acetate of lead. . . . . ʒss.
Nitrate of mercury . . . ʒij.
(Paris.)

Mathieu's vermifuge.

(*For destroying the worms.*)

℞ Tin filings . . . . . ʒj.
Male fern root. . . . . ʒvj.
Santonica seeds . . . . ʒss.
Extract of jalap . . . . ʒj.
Sulphate of potash . . . ʒj.
Honey, q. s. to form an electuary.
A teaspoonful to be taken for a dose.

(*For expelling the worms.*)

℞ Powdered jalap,
Sulphate of potash, āā . . ʒij.
Scammony . . . . . ʒj.
Gamboge . . . . . gr. x.
Honey. . . . . q. s.

Matthew's pills. Starkey's pills.

℞ Black hellebore root,
Liquorice,
Turmeric,
Opium,
Castile soap,
Syrup of saffron,
Equal parts, made into pills with oil of turpentine. (Paris.)

Morrison's pills.

The principal ingredients are aloes, gamboge, and cream of Tartar.

Moxon's effervescent magnesia.

℞ Carbonate of magnesia . . ʒj.
Sulphate of magnesia . . . ʒij.
Bicarbonate of soda . . . ʒij.
Tartrate of potash and soda . ʒij.
Tartaric acid . . . . . ʒij.
To be perfectly freed from water of crystallization, and mixed and kept in a well-corked bottle.

Norris's drops.

Solution of potassio-tartrate of antimony in spirit, disguised by the addition of colouring matter. (Paris.)

Norton's drops.
Ward's white drops.
Marsden's drops.
Green's drops.
Solomon's anti-impetigenes.

These are all disguised solutions of bichloride of mercury.

Pate arsenicale.

℞ Cinnabar . . . . . gr. 70
Dragon's blood . . . . gr. 22
Arsenious acid . . . . gr. 8

Made into a paste with saliva at the time of applying. A favourite remedy of the French surgeons. (Paris.)

Peter's pills.

℞ Aloes, Jalap, Scammony, Gamboge, āā . ʒij.
Calomel . . . . . ʒj.
(Paris.)

Duke of Portland's powder for the gout.

℞ Gentian root,
Birthwort root, (*aristolochia rotunda*,)
Tops and leaves of germander, (*chamædrys*,)
Tops and leaves of ground pine, (*chamæpitys*,)
Tops and leaves of lesser centaury, (*chirouca centaurium*).
Each, in powder, equal parts. (Paris.)

Pringle's remedy for typhus fever.

℞ Lance-leaved cinchona, bruised ʒss.
Virginian snake root, ditto . ʒij.
Spirit of cinnamon . . . fʒj.
Diluted sulphuric acid . . fʒij.
Distilled water . . . . fʒxij.

Boil the bark in the water for ten minutes, adding the snake root towards the end; macerate for an hour in a vessel lightly covered, and to the strained liquid add the spirit of cinnamon and the acid.

Dose.—Two tablespoonfuls every six hours. (Paris.)

Radcliffe's elixir.

℞ Aloes . . . . . ʒvj.
Cinnamon,
Zedoary, āā . . . . . ʒss.
Rhubarb . . . . . ʒj.
Cochineal . . . . . ʒss.
Syrup of buckthorn . . . fʒij.
Proof spirit . . . . . Oj.
Water . . . . . ʒv.
(Paris.)

Roche's embrocation for the hooping-cough.

℞ Olive oil . . . . . ʒij.
Oil of cloves . . . . . ʒj.
Oil of amber . . . . . ʒj.
Mix. (Paris.)

Ruspini's styptic.

This is said to be a solution of Gallic acid in spirit, scented with rose.

Scot's drops. Tinctura fuliginis.

℞ Wood soot. . . . . ʒij.
Assafœtida. . . . . ʒj.
Proof spirit . . . . . ℔ij.
Dose.—ʒss to ʒiss in hysteria.

Singleton's golden ointment.

Sulphuret of arsenic (realgar) and lard, or spermaceti ointment.

The nitric oxide of mercury ointment of the Pharmacopœia is sold under this name. (Paris.)

Smellom's ointment for the eyes.

℞ Verdigris . . . . . ʒss.
Finely powdered and rubbed with oil.
Yellow basilicon . . . . ʒj.
(Paris.)

Solomon's balm of Gilead.

An aromatic tincture, of which cardamoms form a leading ingredient, made

with brandy. Some practitioners have asserted that cantharides enter into its composition. (Paris.)

Speediman's pills.

℞ Aloes,
Myrrh,
Rhubarb,
Extract of chamomile,
Essential oil of chamomile.
(Paris.)

Steer's opodeldoc.

℞ Castile soap	℥j.
Rectified spirit. . . .	f℥viij.
Camphor	ʒiijss.
Oil of rosemary . . .	ʒss.
Oil of thyme	ʒj.
Solution of ammonia . .	ʒvj.

(Paris.)

Mrs. Stephens's remedy for the stone.

℞ Lime, obtained by the calcination of the shells of eggs and of snails, any quantity. Make it into pills with soap.

℞ Chamomile flowers,
Parsley,
Burdock,

Make into a decoction with water, and add a small quantity of

Alicant soap. (Paris.)

The sum of 5000*l.* was paid by the English Government to Mrs. Joanna Stephens for the above prescription.

Story's worm cakes.

Calomel and jalap coloured with cinnabar, and made into small cakes. (Paris.)

Powder of succession.

Supposed to consist principally of diamond dust. Used as an escharotic. (Paris.)

Struve's lotion for hooping-cough.

℞ Potassio-tartrate of antimony	ʒj.
Water.	℥ij.
Tincture of cantharides . .	℥j.

(Paris.)

Tasteless worm medicine.

℞ Santonine.	ʒj.
Sugar	℥v.
Gum tragacanth	ʒss.

Make into 144 lozenges; of these a child may take 5 to 10 daily.

Taylor's remedy for deafness.

℞ Garlic,
Oil of almonds.
Infuse, and colour with alkanet. (Paris.)

Toothache tincture.

℞ Tannin	℈j.
Mastich.	gr. v.
Ether	ʒij.

Mix. To be applied to the tooth, previously dried, on cotton wool.

Velno's vegetable syrup.

℞ Fresh burdock root, sliced .	℥ij.
Dandelion root	℥j.
Spearmint	ʒj.
Senna,	
Coriander,	
Liquorice root, āā . . .	ʒiss.
Water	Oiss.

Boil gently to Oj, and strain; when cold, add

Sugar . . . . . ℔j.

Boil to a syrup, and add a small quantity of a solution of bichloride of mercury. (Paris.)

Walker and Wessel's Jesuit drops.

This is nothing more than the Elixir anti-venereum of Quincy, consisting of guaiacum, balsam of copaiba, and oil of sassafras, made into a tincture with spirit. (Paris.)

Whitehead's essence of mustard.

This consists of oil of turpentine, camphor, and a portion of spirit of rosemary, to which is added a small quantity of flour of mustard. (Paris.)

Whitehead's essence of mustard pills.

Balsam of Tolu, with resin. (Paris.)

Medicamenta veterinaria. *Veterinary medicines.*

For internal application.

ALTERATIVES.

Alteratives (from *altero*, I change) are medicines intended to re-establish the healthy functions of the animal economy, without producing any very sensible evacuation. Antimony frequently enters into the composition of the veterinary medicines of this description.

Alterative balls.

No. 1.

℞ Spiked aloes . . . . . ʒiv.
Soft soap . . . . . ʒiv.
Linseed meal,
Treacle, āā . . . . . ℔j.

Mix into a mass, to be divided into balls weighing ʒj each. (Morton.)

No. 2.

℞ Spiked aloes . . . . . ʒviij.
Soft soap . . . . . ʒviij.
Linseed meal,
Treacle, āā . . . . . ʒviij.

Mix into a mass, to be divided into balls weighing ʒj each. (Morton.)

No. 3.

℞ Barbadoes aloes . . . . . ʒjss,
Potassio-tartrate of antimony ʒj.
Soap . . . . . ʒij.
Linseed meal and treacle, each sufficient to form a ball.

No. 4.

℞ Sulphur . . . . . ℔j.
Nitrate of potash,
Sesquisulphuret of antimony,
Fœnugreek seeds, powd., āā . ℔ss.
Venice turpentine . . . ʒxij.
Treacle sufficient to form a mass.

To be divided into balls of ʒjss each.

No. 5.

℞ Sesquisulphuret of antimony,
Nitrate of potash,
Sulphur,
Ethiop's mineral, āā . . ʒiij.
Soap . . . . . ʒx.
Oil of juniper . . . . ʒiij.

Mix, to form 12 balls. (J. Bell and o.)

No. 6.

℞ Sulphur,
Nitrate of potash,
Sesquisulph. of antimony, āā ℔j.
Resin . . . . . ℔ss.
Treacle and linseed meal, sufficient to form a mass.

To be divided into balls of ʒjss each.

Alterative powders.

No. 1.

℞ Sulphur . . . . . 2 parts.
Sesquisulphuret of antimony,
Nitrate of potash, āā . . 1 part.

Mix into a powder, of which ʒss or ʒj is to be given for a dose. (Morton.)

No. 2.

℞ Sesquisulphuret of antimony,
Bitartrate of potash,
Nitrate of potash, āā . . ʒij.

Mix into a powder. (Blaine.)

No. 3.

℞ Sulphur . . . . . ʒss.
Bitartrate of potash,
Nitrate of potash, āā . . ʒij.

Mix into a powder. (Blaine.)

No. 4.

℞ Sesquisulphuret of antimony ʒiv.
Sulphur . . . . . ʒij.
Bean flour, or barley meal . ℔ss.

Mix into a powder. A tablespoonful for a dose. (Bracy Clark.)

ANTHELMINTICS.

Anthelmintics (from *ἀντί, against*, and *ἕλμινς, a worm*) are medicines for destroying and causing the evacuation of worms from the stomach and intestines.

Worm balls.

No. 1.

℞ Barbadoes aloes . . . . ʒiv.
Calomel . . . . . ʒj.
Ginger,
Soap, āā . . . . . ʒij.
Oil of cloves . . . . 10 drops.
Treacle, sufficient to form a ball.

Veterinary medicines.

No. 2.

℞ Barbadoes aloes . . . . ℥iv.
Powdered tin . . . . ℥iij.
Ginger . . . . . ℥j.
Soap . . . . . ℥ij.
Treacle, sufficient to form a ball.

No. 3.

℞ Barbadoes aloes . . . ℥v to ℥j.
Powdered tin . . . ℥ij
Ethiop's mineral. . . ℥ij.
Powdered ginger . . ℥j.
Oil of aniseed . . . gtt. xx.
Oil of savine . . . . gtt. xx.
Treacle sufficient to form a ball.
(J. Bell and Co.)

Worm drench.

No. 1.

℞ Common salt. . . . . ℥iv.
Powdered aloes . . . . ℥ij.
Water . . . . . Oij.
Mix.

No. 2.

℞ Oil of turpentine . . . f℥iv.
Oatmeal gruel . . . . Oj.
Mix.

No. 3.

℞ Oil of turpentine . . . f℥iv.
Castor oil, or linseed oil . f℥viij.
Oatmeal gruel . . . . ℥viij.
Mix.

ANTISPASMODICS, NARCOTICS, AND SEDATIVES.

Antispasmodics (from *ἀντί*, *against*, and *σπασμος*, a *spasm*) are medicines which possess the power of allaying or removing inordinate or painful motions in the system, especially those involuntary contractions which take place in muscles naturally subject to the command of the will. *Narcotics* (*ναρκω*, to *stupefy*)—medicines which have the power of procuring sleep; and *sedatives* (from *sedo*, to ease or assuage)—medicines which have the power of diminishing the animal energy, without destroying life, are used to allay or diminish spasmodic action in the body.

Antispasmodic draughts.

No. 1.

℞ Tincture of opium . . . ℥j.
Spirit of nitric ether . . . ℥ij.
Aloes . . . . . ℥ss.
Proof spirit . . . . . ℥ss.
Water. . . . . ℥iv.
Mix for a draught. (Morton.)

No. 2.

℞ Opium, camphor, āā . . . ℥ij.
Spirit of hartshorn . . . ℥j.
Oil of turpentine . . . . ℥ij.
Strong ale. . . . . Oj.
Mix for a draught. (Blaine.)

No. 3.

℞ Pepper . . . . . ℥ss.
Oil of turpentine. . . . ℥iij.
Tincture of opium . . . ℥j.
Strong ale . . . . . ℥x.
Mix for a draught. (Blaine.)

No. 4.

℞ Tincture of opium . . . ℥ij.
Ether. . . . . ℥j.
Oil of peppermint . . . ℥j.
Strong ale,
Gin, āā . . . . . ℥v.
Mix for a draught. (Blaine.)

No. 5.

℞ Oil of turpentine . . . ℥ij.
Oil of peppermint . . . ℥j.
Castor oil . . . . . ℥vj.
Tincture of aloes. . . . ℥iij.
Mix for a draught. (Blaine.)

No. 6.

℞ Pepper . . . . . ℥ss.
Gin . . . . . ℥v.
Strong ale . . . . . ℥v.
Juice of two or three large onions.
Mix for a draught. (Blaine.)

No. 7.

℞ Assafœtida . . . . . ℥ss.
Squills . . . . . ℥j.
Soap . . . . . ℥ij
Oil of turpentine . . . . ℥ij.
Balsam of Peru . . . . ℥ss.
Water . . . . . ℥iv.
Mix for a draught. (White.)

Veterinary medicines.

No. 8.

℞ Digitalis . . . . . ʒss.
Extract of hemlock . . . ʒij.
Water . . . . . Oss.
Mix for a draught. (White.)

Antispasmodic clyster.

℞ Decoction of poppies . . cong. j.
Camphor (dissolved in spirit) ℥j.
Mix. (Blaine.)

CATHARTICS.

Cathartics (from *καθαιρω, to purge*) are medicines which, taken internally, increase the number of alvine evacuations. Aloes are generally considered the best cathartic medicine for horses, and form the basis of most medicines of this kind.

Cathartic or physic balls.

No. 1.

℞ Aloes. . . . . ℔viij.
Olive oil . . . . . ℔j.
Treacle . . . . . ℔iij.
Melt over a water-bath.
Dose.—From ʒvj to ʒxij. (Morton.)

No. 2.

℞ Cape aloes . . . . . ʒvj.
Croton oil . . . . . gtt. v.
Mix for a ball. (Morton.)

No. 3.

℞ Barbadoes aloes. . . . ʒv.
Oil of caraway . . . . gtt. x.
Palm oil . . . . . ʒiij.
Ginger . . . . . ʒss.
Mix for a ball. (Blaine.)

No. 4.

℞ Barbadoes aloes . . . . ℥viij.
Ginger . . . . . ℥j.
Soap. . . . . ℥j.
Treacle . . . . . q. s.
Melt at a moderate heat to form a mass.
Dose.—From ʒv to ʒx. (J. Bell and Co.)

No. 5.

Melt the best Barbadoes aloes with one-fifth of its weight of treacle in a water-bath, and mix them well together. From ʒviij to ʒx for a dose. (Bracy Clark.)

CORDIALS, STIMULANTS, AND EXPECTORANTS.

Cordials and *stimulants* are medicine which possess warm and stimulating properties, which are capable of exciting the animal energy, and which are generally given to raise the spirits.

Expectorants (from *expectoro*, to discharge from the breast) are medicines which increase the discharge of mucus from the lungs, and thereby remove or alleviate coughs and difficulty of breathing.

Cordial balls.

No. 1.

℞ Ginger, in powder . . . ℔j.
Gentian, in powder . . . ℔j.
Honey or palm oil sufficient to form a mass.
Dose.—From ℥j to ℥iss. (Morton.)

No. 2.

℞ Coriander seed, in powder . ℥viij.
Gentian, in powder . . . ℥viij.
Ginger in powder . . . . ℥iv.
Caraway seed, in powder. . ℥viij.
Oil of aniseed. . . . . ℥ss.
Honey or palm oil sufficient to form a mass.
Dose.—℥iss. (Blaine.)

No. 3.

℞ The mass No. 2 . . . . ℥jss.
Powdered myrrh . . . . ʒj.
Balsam of Tolu . . . . ʒj.
Mix to form a ball. (Blaine.)

No. 4.

℞ The mass No. 2 . . . ℥j.
Opium. . . . . gr. xx.
Camphor . . . . . ʒj.
Mix to form a ball. (Blaine.)

No. 5.

℞ Pimento, in powder . . . ℔j.
Barley meal . . . . . ℔ij.
Treacle or honey sufficient to form a mass.
Dose.—℥iss. (Bracy Clark.)

No. 6.

The mass No. 5, with the addition of a little ginger, cinnamon, or white or cayenne pepper. (Bracy Clark.)

Veterinary medicines.

No. 7.

℞ Aniseed, in powder . . . ℔j.
Gentian, in powder . . . ℔j.
Cascarilla, in powder . . . ℔j.
Honey sufficient to form a mass.
Dose.—ʒiss. (Blaine.)

Cordial drinks.

No. 1.

℞ Decoction of chamomile . . Oiij.
Decoction of aloes . . . . ʒiv.
Ginger, in powder . . . ʒss.
Sulphate of iron . . . . ʒiss.
Mix, and divide into four doses. (Blaine.)

No. 2.

℞ Gripe tincture* . . . . fʒiv.
Water . . . . . fʒviij.
Mix for a dose. (Bracy Clark.)

No. 3.

℞ Ginger in powder . . ʒij. to ʒiv.
Strong ale (warm) . . Oj.
Mix for a dose. (Morton.)

No. 4.

℞ Caraway seeds, in powder ʒss. to ʒj.
Strong ale (warm) . . Oj.
Mix for a dose. (Morton.)

No. 5.

℞ Caraway seeds, in powder . ʒss.
Ginger, in powder . . . . ʒss.
Carbonate of soda . . . ʒj.
Brandy . . . . . ʒj.
Water . . . . . ʒviij.
Mix for a dose. (Gray.)

No. 6.

℞ Aromatic spirit of ammonia . ʒij.
Common salt . . . . . ʒj.
Water . . . . . Oss.
Mix for a dose. (Gray.)

No. 7.

℞ Barbadoes aloes . . . ʒiij.
Cascarilla, in powder . . ʒij.
Oil of peppermint . . . gtt. xx.
Tincture of cardamoms . ʒj.
Water (warm) . . . . Oj.
Mix for a dose. (Gray.)

* *Gripe Tincture.* — ℞ Pimento, in powder, ℔j.—Rectified spirit and water, of each Oiij. Macerate for seven days, and strain.

Cough balls.

No. 1.

℞ Ammoniacum . . . . . ʒss.
Powdered squill . . . . ʒj.
Soap . . . . . ʒij.
Honey enough to form a ball for one dose. (White.)

No. 2.

℞ Assafœtida . . . . . ʒiij.
Galbanum . . . . . ʒj.
Carbonate of ammonia . . ʒss.
Ginger . . . . . ʒiss.
Honey sufficient to form a ball for one dose. (White.)

No. 3.

℞ Camphor . . . . . ʒiss.
Powdered squills . . . . ʒj.
Balsam of Tolu . . . . ʒj.
Ginger, in powder . . . ʒij.
Honey sufficient to form a ball for one dose. (White.)

No. 4.

℞ Aloes . . . . . ʒij.
Digitalis, in powder . . . ʒj.
Liquorice, in powder . . . ʒxiij.
Honey or Barbadoes tar sufficient to form a mass.
Dose.—ʒj twice a day. (Morton.)

No. 5.

℞ Ipecacuanha . . . . . ʒj.
Camphor . . . . . ʒij.
Liquorice powder . . . . ʒss.
Honey sufficient to form a ball.
To be given every morning. (Blaine.)

No. 6.

℞ Liquorice powder . . . . ʒss.
Linseed or barley meal . . ʒj.
Tar . . . . . ʒss.
Honey sufficient to form a ball (Bracy Clark.)

No. 7.

℞ Emetic tartar . gr. x. to gr. xv.
Digitalis . . . ʒss. to ʒj.
Honey sufficient to form a ball.
This may be given to cattle or sheep, in the above dose. (Morton.)

Veterinary medicines.

No. 8.

℞ Digitalis . . . . gr. j. to gr. ij.
Liquorice powder . ʒij.
Honey sufficient to form a ball.
(Morton.)

Cough drink.

℞ Cold-drawn linseed oil . . ʒij.
Liquor potassæ . . . . ʒj.
Treacle . . . . . ʒj.
Water . . . . . ʒx.
Mix for a dose. (Bracy Clark.)

DEMULCENTS & RESTORATIVES.

Demulcents (from *demulceo*, to soften) are softening and diluting medicines, intended to sheath the parts with which they come in contact, and protect them from irritating secretions or substances. The substances administered as demulcents frequently act at the same time as *restoratives*, such as gruel and bran mashes.

Demulcent drenches.

No. 1.

℞ Linseed bruised . . . . ʒiv.
Boiling water . . . . . Oiij.
Honey . . . . . ʒiv.
Let it stand till cold. To be given in two doses.

No. 2.

℞ Marshmallow root . . . ʒiv.
Water . . . . . Oij.
Boil for a few minutes, and strain, then add,
Honey . . . . . ʒiv.
Linseed oil . . . . . ʒij.
Gum arabic . . . . . ʒij.
Mix. For two doses.

Bran mash.

Put half a peck of bran into a pail, and pour enough boiling water over it to thoroughly wet it; stir it well with a stick, cover it over, and let it stand until of the temperature of new milk. Oats, malt, treacle, or honey, may be added to it, to render it more nutritious. (Bracy Clark.)

Malt mash.

To be made with malt in the same way as the bran mash.

Blanch water.

Pour boiling water over three or four handfuls of bran; stir it well up with a stick; cover it over, and let it stand for a few minutes; then add as much water as may be desired.

It is useful in cases of inflamed lungs or bowels, and after purging physic, being in these cases preferable to mere water.
(Bracy Clark.)

Oatmeal gruel.

Put half a pint of good fresh oatmeal into a bowl, add about half a pint of cold water to it, and with a wooden spoon beat it well up for some time; then boil it with more water to form a gallon of gruel.

Gruel for horses ought not to be thick.
(Bracy Clark.)

DIURETICS AND DIAPHORETICS.

Diuretics (from διουρήσις, a discharge of urine) are medicines which, when taken internally, augment the flow of urine from the kidneys. *Diaphoretics* (from διαφορεω, to carry through) are medicines which, when taken internally, increase the discharge by the skin.

Diuretic balls.

No. 1.

℞ Castile soap,
Resin, āā . . . . . ʒiij.
Nitre . . . . . ʒiv.
Oil of juniper . . . . . ʒj.
Honey q. s. to make into a ball.
(White.)

No. 2.

℞ Camphor . . . . . ʒj.
Nitre . . . . . ʒss.
Castile soap . . . . . ʒiij.
Oil of juniper . . . . . ʒj.
Mix, to make a ball. (White.)

No. 3.

℞ Nitre . . . . . ℔j.
Castile soap . . . . . ℔ss.
Common turpentine . . ℔j.
Barley meal . . . . ℔iiss.
Or sufficient to form a mass.
(Bracy Clark.)

Veterinary medicines.

No. 4.

℞ Common turpentine,
Soap,
Nitre, āā . . . . . ℔ss.
Barley, or linseed-meal, q. s. to form a mass.

Diuretic powders.

No. I.

℞ Yellow resin . . . . . ℔j.
Nitre . . . . . ℔ij.
Cream of tartar . . . . ℔j.
Mix. ʒvj, ʒx, or ʒxii, in a mash.
(Blaine.)

No. 2.

℞ Nitre . . . . . ʒvj.
Camphor . . . . . ʒiss.
Mix, for a dose. (White.)

Diuretic drinks.

No. 1.

℞ Glauber's salts . . . . ℥ij.
Nitre . . . . . ʒvj.
Warm water . . . . . Oj.
Sweet spirit of nitre . . . ʒj.
Mix, and give it with the horn.
(Bracy Clark.)

No. 2.

℞ Glauber's salts . . . . ℥iv.
Nitre . . . . . ℥ss.
Sweet spirits of nitre . . . ʒij.
Oil of juniper . . . . . ʒj.
Thin gruel . . . . . Oj.
Mix, and give it with the horn.

Stimulating diaphoretic balls.

No. 1.

℞ Emetic tartar . . . . ʒiss.
Camphor . . . . . ʒss.
Ginger . . . . . ʒij.
Opium . . . . . ℈j.
Oil of caraways . . . gtt. xv.
Honey, q. s. to form a ball.
(White.)

No. 2.

℞ Antimonial powder . . ʒij.
Caraway powder . . . ʒvj.
Ginger . . . . . ʒj.
Oil of aniseed . . . . gtt. xx.
Honey, q. s. to form a ball.
(White.)

Diaphoretic, or fever balls.

No. 1.

℞ Camphor . . . . . ʒiss.
Nitre . . . . . ʒiv.
Calomel,
Opium, āā . . . . gr. xx.
Honey and linseed-meal, q. s. to form a ball. (White.)

No. 2.

℞ Emetic tartar . . . . . ʒiss.
Tragacanth powder . . . ʒij.
Syrup, q. s. to form a ball.
(White.)

No. 3.

℞ Camphor . . . . . ʒij.
Nitre . . . . . ℥j.
Honey, q. s. to form a ball.
(White.)

TONICS AND ASTRINGENTS.

Tonics are medicines which restore the tension and vigour of the muscular fibre, when it has been weakened and relaxed. *Astringents* contract the animal fibre, and thus suppress excessive evacuations.

Tonic balls.

No. 1.

℞ Peruvian bark . . . . ʒij.
Ginger . . . . . ʒss.
Conserve of roses, q. s. to form a ball.

No. 2.

℞ Sulphate of iron . . . . ʒiij.
Salt of tartar . . . . . ʒij.
Treacle and linseed-meal, q. s. to form a ball.

No. 3.

℞ White arsenic . . . . . gr. x.
Ginger . . . . . ʒj.
Powdered aniseed . . . . ℥ss.
Tragacanth powder . . . ʒij.
Syrup, q. s. to form a ball.
(White.)

Tonic drinks.

No. 1.

℞ Sulphate of zinc . . . . ʒss.
Ginger or pimento, powdered, ʒj.
Treacle . . . . . ℥j.
Water . . . . . ℥xij.
Mix. To be given with the horn.
(Bracy Clark.)

Veterinary medicines.

No. 2.

℞ Ægyptiacum . . . . . ʒss.
Pimento or ginger . . . ʒss.
Water . . . . . ʒxij.
Or enough to form a drink. (Bracy Clark.)

No. 3.

℞ Quassia chips . . . . . ʒij.
Water . . . . . Oiij.
Boil till reduced to Oij.
To be given in three drinks. (Bracy Clark.)

Astringent balls.

No. 1.

℞ Opium . . . . . ʒj.
Ginger . . . . . ʒiss.
Chalk . . . . . ʒiss.
Honey, q. s. to form a ball.
For diarrhœa. (White.)

No. 2.

℞ Catechu . . . . . ʒj.
Cinnamon . . . . . ʒj.
Linseed-meal and palm oil, sufficient to form a ball.
For diarrhœa, &c. (Morton.)

No. 3.

℞ Kino . . . . . ʒij.
Cassia,
Ginger, āā. . . . . ʒj.
Treacle, q. s. to form a ball.
For diarrhœa, &c.

No. 4.

℞ Oak bark . . . . . ʒss.
Ginger . . . . . ʒj.
Opium . . . . . ʒss.
Treacle, q. s. to form a ball.
For diabetes. (White.)

Astringent powder for nasal gleet.

℞ Powdered cantharides . . ʒss.
Sulphate of zinc . . . . ʒij.
Pimento powder . . . . ʒj.
Barley or oatmeal . . . . ʒiv.
Mix well together. A table-spoonful every morning. (Bracy Clark.)

Astringent drinks.

No. 1.

℞ Glauber's salts . . . . ʒvj.
Epsom salts . . . . . ʒiij.
Common salt . . . . . ʒss.
Sulphate of iron . . . . gr. v.
Dissolve in a quart of warm water, and divide into three drinks. For diarrhœa. (Bracy Clark.)

No. 2.

℞ Powdered gum arabic . . ʒj.
Prepared chalk . . . . ʒj.
Laudanum . . . . . ʒss.
Mint water . . . . . ʒxij.
Mix.

No. 3.

℞ Opium . . . . . ʒss.
Ginger . . . . . ʒiij.
Oak bark . . . . . ʒj.
Decoction of chamomile . . Oj.
Mix.

For external application.

ASTRINGENTS AND ANTISEPTICS.

Astringents are used externally for diminishing discharges from wounds, &c. *Antiseptics* (from ἀντί against, and σήπω, to putrefy) are medicines for preventing putrefaction.

Astringent powders.

No. 1.

℞ Powdered alum . . . . ʒiv.
Armenian bole . . . . . ʒj.
Mix. (White.)

No. 2.

℞ Sulphate of zinc, powdered . ʒiv
Oxide of zinc . . . . . ʒj.
Mix.

Astringent solutions.

No. 1.

℞ Sulphate of zinc . . . . ʒiv.
Water . . . . . Oj.
Dissolve.
For promoting the adhesion of living surfaces, in wounds, &c. (Bracy Clark.)

Veterinary medicines.

No. 2.

℞ Alum . . . . . ʒiv.
Boiling water . . . . . Oj.
Dissolve.

For cracks in the skin, and grease chaps. (Bracy Clark.)

No. 3.

℞ Sugar of lead . . . . . ʒiv.
Water . . . . . Oj.
Dissolve.

No. 4.

℞ Tincture of muriate of iron . ʒj.
Water . . . . . ʒiv.
Mix.

Astringent liniment.

Ægyptiacum, or Linimentum æruginis, is one of the most common and useful applications of this kind.

Astringent ointments.

No. 1.

℞ Venice turpentine . . . . ʒiv.
Lard . . . . . ʒvj.
Melt, and stir in sugar of lead . ʒij.
Make into an ointment. (White.)

No. 2.

℞ Resin . . . . . ℔ss.
Wax . . . . . ʒiv.
Lard . . . . . ℔ij.
Verdigris . . . . . ʒvj.
Melt the resin, wax, and lard, and stir in the verdigris until cold.

Hoof ointment.

℞ Tallow . . . . . ℔iv.
Bees-wax . . . . . ʒiv.
Tar . . . . . ℔ss.
Melt slowly over a fire, and stir them till cold. (Bracy Clark.)

Antiseptic fomentation.

℞ Decoction of marsh mallow . Oviij.
Sal ammoniac . . . . ʒiv.
Camphorated spirit . . . ʒvj.
Mix.

Antiseptic poultices.

No. 1.

℞ Oatmeal . . . . . ℔ss.
Linseed-meal . . . . . ℔ss.
Charcoal . . . . . ʒiv.
Yeast . . . . . q. s.
(Blaine.)

No. 2.

Carrots or turnips boiled and mashed into a poultice, to which charcoal may be added. (Blaine.)

No. 3.

Linseed made into a poultice with boiling water, and ʒj or ʒij of oil of turpentine added to about ℔ij of the poultice.

CAUSTICS AND DETERGENTS.

Caustics (from *καίω, καυσω*, to burn) are substances which destroy the parts to which they are applied by chemically decomposing them. *Detergents* (from *detergo*, to wipe away) are substances which cleanse wounds, ulcers, &c., and excite healthy action in them.

Solid caustics.

The following are those most frequently used:—The hot iron (*actual cautery*), Lunar caustic, Fused potash, Sulphate of copper, Nitrate of copper, Corrosive sublimate, Quicklime, and Red precipitate.

Liquid caustics.

No. 1.

Butter of antimony (chloride of antimony).

No. 2.

℞ Quicksilver . . . . . ʒss.
Nitric acid . . . . . ʒj.
Dissolve with heat. (White.)

No. 3.

℞ Corrosive sublimate . . . ʒss.
Water, sufficient to dissolve it.
(Blaine.)

No. 4.

℞ Chloride of zinc . . . . ʒj.
Water . . . . . ʒiv.
Mix.

No. 5.

℞ Verdigris . . . . . ʒj.
Acetic acid . . . . . ʒij.
Mix.

No. 6.

℞ Sulphate of copper . . . . ʒj.
Water . . . . . ʒvj.
Dissolve. (Morton.)

Veterinary medicines.

Detergent ointments.

No. 1.

℞ Red precipitate . . . . ʒij.
Lard . . . . . ʒiv.
Common turpentine . . . ʒvj.
Mix. (White.)

No. 2.

℞ Verdigris . . . . . ʒij.
Common turpentine . . . ʒiv.
Lard . . . . . ʒij.
Mix.

Detergent liniment.

℞ Ægyptiacum . . . . . ʒiij.
Tincture of myrrh . . . ʒj.
Mix.

Detergent lotion.

℞ Sulphate of zinc . . . . ʒj.
Water . . . . . ʒiv.
Mix. (White.)

DIGESTIVES AND DISCUTIENTS.

Digestives (from *digero*, to dissolve) are substances which, when applied to ulcers or wounds, induce or promote suppuration. *Discutients* (from *discutio*, to shake in pieces) are substances which possess the power of repelling or resolving tumours.

Digestive ointments.

No. 1.

℞ Resin . . . . . ℔j.
Linseed oil . . . . . ʒxij.
Melt them over a fire, and stir till cold. (Bracy Clark.)

No. 2.

℞ Common turpentine . . . ʒiij.
Bees-wax . . . . . ʒij.
Lard . . . . . ʒiv.
Melt them over a fire, and stir till cold. (White.)

No. 3.

℞ Tar . . . . . ℔ij.
Resin . . . . . ℔j.
Lard . . . . . ℔j.
Melt them over the fire, and stir till cold.

Discutient liniment.

℞ Mercurial ointment . . . ʒij.
Camphor . . . . . ℥ss.
Oil of turpentine,
Oil of origanum, āā . . . fʒss.
Mix.

Discutient ointment.

℞ Iodide of potassium . . . ʒj.
Spirit of wine . . . . . fʒj.
Rub together, and add,
Lard . . . . . ʒj.
Mercurial ointment . . . ʒj.
Camphor . . . . . ʒij.
Mix.

EMOLLIENTS.

Emollients (from *emollio*, to soften) are substances employed for softening and relaxing the living tissues.

Simple poultices are frequently used for this purpose; or marshmallow and elder ointments.

POISONS FOR VERMIN.

No. 1.

℞ Tobacco . . . . . ʒiv.
Water . . . . . Oij.
Boil for a quarter of an hour, and then strain. To be used as a wash.

No. 2.

℞ Corrosive sublimate . . . ʒij.
Spirits of wine . . . . ʒij.
Water . . . . . Oij.
Mix, for a wash.

REFRIGERANTS.

Refrigerants (from *refrigero*, to cool) are applications for reducing the morbid heat of any part of the body.

No. 1.

℞ Acetate of lead . . . . ʒij.
Vinegar . . . . . ʒij.
Spirits of wine . . . . ʒij.
Water . . . . . Oij.
Mix, for a lotion.

No. 2.

℞ Salammoniac . . . . . ʒj.
Vinegar . . . . . ʒiv.
Spirits of wine . . . . ʒij.
Water . . . . . Oiss.
Mix, for a lotion.

Veterinary medicines.

No. 3.

℞ Goulard's extract . . . . ℥ij.
Spirits of wine . . . . ℥ss.
Distilled water . . . . Oij.
Mix, for a lotion.

TRAUMATICS.

Traumatics (from τραυμα, a wound) are applications employed for promoting the healing of wounds.

Compound tincture of myrrh is the most common application for this purpose. It is made as follows:—

Tinctura myrrhæ composita. Tinctura myrrhæ et aloes. Compound tincture of myrrh. Tincture of myrrh and aloes. Horse tincture of myrrh.

℞ Myrrh
Barbadoes aloes. āā . . . ℥iv.
Rectified spirit . . . . Oiij.
Water . . . . . Oj.
Macerate for 14 days, and strain.

Traumatic solutions.

No. 1.

℞ Sulphate of zinc . . . . ℥j.
Water . . . . . ℥vj.
Mix.

No. 2.

℞ Sulphate of copper . . . ℥j.
Water . . . . . ℥vj.
Mix.

No. 3.

Oil of tar has been recommended as a traumatic.

VESICANTS AND RUBEFACIENTS.

Vesicants (from *vesico*, a bladder) are applications for blistering the skin, and causing a discharge of serous fluid. *Rubefacients* (from *rubefacio*, to make red) are substances which, applied to the skin, produce redness without blistering.

Blistering ointments.

No. 1.

℞ Powdered cantharides . . ℥iv.
Lard . . . . . ℔ij.
Oil of origanum . . . . ʒij.
Mix. (Bracy Clark.)

No. 2.

℞ Powdered cantharides. . . ℥iv.
Spirit of turpentine . . . ℥iij.
Powdered euphorbium . . ʒij.
Lard . . . . . ℔ij.
Oil of origanum . . . . ʒij.
Mix. (Bracy Clark.)

No. 3.

℞ Powdered cantharides . . ℥ij.
Common turpentine . . . ℥ij.
Lard . . . . . ℥viij.
Mix. (Morton.)

No. 4.

℞ Common resin . . . . ʒvj.
Linseed oil . . . . . ℔ss.
Dissolve and add,
Powdered cantharides . . ʒvj.
Lard . . . . . ℥xij.
Oil of origanum . . . . ʒij.
Mix. (Bracy Clark.)

No. 5.

℞ Powdered cantharides . . ℥i.
,, euphorbium . . ℥iss.
Corrosive sublimate . . . ʒj.
Oil of origanum . . . . ʒij.
Lard . . . . . ℥viij.
Mix.

Blistering liniments, or liquid blisters.

No. 1.

℞ Powdered cantharides. . . ℔ss.
Oil of turpentine . . . . Oiv.
Olive oil . . . . . Oij.
Macerate the cantharides in the oil of turpentine for a week; then strain it, and add the olive oil to the strained liquor.

No. 2.

℞ Powdered cantharides . . ʒij.
Flour of mustard . . . . ℥ij.
Oil of turpentine,
Olive oil, āā . . . . . ℥viij.
Mix together.

Rubefacient liniments.

No. 1.

℞ Olive oil . . . . . ℥iij.
Camphor . . . . . ʒiij.
Oil of turpentine . . . . ℥ss.
Solution of ammonia . . . ʒiij.
Mix.

Veterinary medicines.

No. 2.

℞ Oil of bays . . . . . ℥j.
Soft soap . . . . . ℥ij.
Solution of ammonia . . . ℥iss.
Spirits of camphor . . . ℥ij.
Oil of origanum . . . . ʒij,
Mix.

No. 3.

℞ Soft soap . . . . . ℥ij,
Camphor . . . . . ℥j.
Oil of turpentine . . . . ℥iv.
Oil of origanum . . . . ʒij.
Mix.

Embrocation for sprains. Egg oils.

℞ Common vinegar . . . . Oiss.
Oil of turpentine . . . . ʒiss.
Spirits of wine . . . . ℥iss.
Goulard's extract . . . . ℥ss.
The white and yolk of two eggs.

Mix the oil of turpentine and Goulard's extract with the eggs, then add the vinegar gradually, and lastly the spirit of wine.

MEERSCHAUM (German for *sea-froth*).

A white or greyish-green mineral, soft and dry to the touch, and adhering to the tongue. It consists, according to Klaproth, of Silica 41·5; Magnesia 18·25; Water and carbonic acid 39. It is found in Greece, Turkey, and other parts. When dug up, it is soft, greasy, and lathers like soap, and is therefore used by the Tartars in washing linen. The principal consumption of it, however, is in the manufacture of tobacco pipes.

MEL. *Honey.*

A saccharine substance elaborated by bees from the sweet juices of the nectaries of flowers, and deposited by them in waxen cells, called the honeycomb. It consists of crystallizable and uncrystallizable grape sugar, with some aromatic substance which gives it a peculiar flavour. This flavour differs according to the sources from whence the honey has been obtained by the bees; thus *Narbonne honey* derives its flavour from the rosemary and other labiate flowers on which the bees producing it feed.

MEL DEPURATUM (*Mel despumatum*). *Despumated honey. Clarified honey.*

Dubl. Ph. 1850.

℞ Fine honey, any quantity.

Melt it in a water-bath, and strain it while hot through flannel.

Ph. Borussica, 1847.

℞ Honey . . . . . ℔viij.
Water . . . . . ℔xvj.
Vegetable charcoal, coarsely powdered . . . . ℥ij.

Mix the honey and the water, and heat them in a tinned vessel to about 212° Fahr. for an hour, avoiding ebullition; put them in an earthen vessel, and set by in a cold place for one night. Then add the vegetable charcoal, filter through a bag, and evaporate in a vapour-bath at 167° or 185° Fahr., to the consistence of syrup, and strain.

Note.—Keep it in a cold place. It should be clear, and when mixed with water, remain limpid, of a yellowish-brown colour, and void of an acid taste or flavour.

MEL PREPARATUM. *Prepared honey.*

U. S. Ph. 1840.

℞ Clarified honey . . . . Oss.
Diluted alcohol . . . . Oj.
Prepared chalk . . . . ℥ss.

Having mixed the honey and diluted alcohol, add the prepared chalk, and allow the mixture to stand, occasionally stirring it. Then heat it to ebullition, filter and by means of a water-bath evaporate the clear liquor, so that when cold it may have the sp. gr. of 1·32.

Mel boracis. *Honey of borax.* Lond. Ph. 1851. Edin. Ph. 1841, and Dubl. Ph. 1850.

℞ Borax, powdered . . . ʒj.
Honey, despumated . . . ℥j.
Mix.

Med Use.—Detergent in aphthous affections of the tongue and fauces.

SYNONYME.

Mellite of Borax.

Mel rosæ. *Honey of rose.* Lond. Ph. 1851.

℞ Dried French rose . . . ʒiv.
Boiling distilled water . . ʒxxiv.
Honey . . . . . ℔v.

Macerate the rose, previously pulled to pieces, in 16 fluidounces of the water, for 2 hours; then express slightly with the hand, and strain. Macerate that which remains again, in the remaining water for a little while, and pour off the liquor. Add the half part of the former infusion to this; set aside a half. Afterwards, add the mixed liquors to the honey, and evaporate in a water-bath, that the liquor set aside being mixed in, it may become of a proper consistence.

Edin. Ph. 1841.

℞ Dried petals of rosa gallica . ʒiv.
Boiling water . . . . Oiiss.
Honey . . . . . ℔v.

Infuse the petals in the water for six hours; strain and squeeze; let the impurities subside; pour off the clear liquor; mix the honey with it, and evaporate the whole in the vapour-bath to the consistence of syrup, removing the scum which forms.

Med. Use.—As an adjunct to detergent gargles.

SYNONYMES.

Mel rosatum.—Lond. Ph. 1721.
Mel rosaceum.—Lond. Ph. 1746.

Mellago.

Any medicine having the consistence and sweetness of honey.

Mellago taraxaci.

This term has been applied to fluid extract of dandelion.

Metheglin.

A wine made from honey in the following manner:—Put one hundred-weight of honey into a thirty-two gallon cask, and fill it up with boiling water; stir them well together for a day or two, then add yeast, and ferment it. The honey is sometimes boiled with the water for an hour or two, and about an ounce of hops added, previous to the fermentation.

Microcosmic salt. (From μικρος, little, and κοσμος, order.)

A double salt, obtained by mixing equal parts of phosphate of soda and phosphate of ammonia, in solution, and evaporating it to crystallization. It is much used as a flux in experiments with the blow-pipe.

Mistura acaciæ. *Mixture of acacia.* Lond. Ph. 1851.

℞ Acacia, powdered . . . ʒx.
Water, boiling . . . . Oj.

Rub the acacia with the water gradually poured in, and dissolve it.

Edin. Ph. 1841. *Mucilago.*

℞ Gum arabic . . . . . ʒix.
Water, cold . . . . . Oj.

Mix them, allow the gum to dissolve without applying heat, but with occasional stirring; then strain through linen or calico.

Dubl. Ph. 1850. *Mucilago acaciæ.* (*Mucilago gummi arabici.*)

℞. Gum arabic . . . . . ʒiv.
Water . . . . . ℥vj.

Dissolve the gum in the water with occasional stirring, then strain through flannel.

Med. Use.—Demulcent. A useful adjunct to cough mixtures; also useful in irritation of the urinary organs.

Dose.—fʒss to fʒj.

SYNONYMES.

Mucilago arabici gummi.—Lond. Ph. 1788.

Mucilago acaciæ.—Lond. Ph. 1809—1824.

Emulsio acaciæ arabicæ.—Edin. Ph. 1839.

Mistura althææ. *Mixture of marshmallow.*

Edin. Ph. 1841.

℞ Althæa root, dried . . .	℥iv.
Raisins, freed of the seeds .	℥ij.
Boiling water	Ov.

Boil down to three pints; strain through linen or calico, and when the sediment has subsided, pour off the clear liquor for use.

Med. Use.—Emollient. Used in the various species of mucous inflammation.

Dose.—From one to three pints may be taken during the day.

SYNONYME.

Decoctum althææ.—Edin. Ph. 1839.

Mistura ammoniaci. *Mixture of ammoniacum.*

Lond. Ph. 1851.

℞ Ammoniacum	℥v.
Water	Oj.

Rub the ammoniacum with the water, gradually poured in, until they are perfectly mixed.

Dubl. Ph. 1850.

℞ Gum ammoniac	℥ij.
Water	℥viij.

Triturate the gum with the water gradually added, until the mixture assumes the appearance of milk; then strain through muslin.

Med. Use.—Said to be useful in attenuating cough phlegm, and promoting expectoration in humoral asthmas, coughs, &c.

Dose.—Two table-spoonsful twice or thrice a-day.

SYNONYME.

Lac ammoniaci. Lond. Ph. 1746, 1788. Dubl. Ph. 1807.

Mistura amygdalæ. *Mixture of almond.*

Lond. Ph. 1851.

℞ Confection of almond . .	℥iiss.
Distilled water	Oj.

Add the water to the confection of almonds, gradually, while rubbing them, until they are mixed; afterwards strain through linen.

Edin. Ph. 1841. *Mistura amygdalarum.*

℞ Conserve of almonds . . .	℥ij.
Water	Oij.

Add the water gradually to the confection, triturating constantly, and then strain through linen or calico.

Or,

℞ Sweet almonds . . .	℥j. ʒij.
Pure sugar	ʒv.
Mucilage	f ℥ss.
Water	Oij.

Steep the almonds in hot water and peel them; and proceed as for the mistura acaciæ.

Dubl. Ph. 1850. *Mistura amygdalæ.*

℞ Sweet almonds	ʒv.
Refined sugar	ʒij.
Gum arabic, in powder . .	ʒj.
Distilled water	℥viij.

Steep the almonds in hot water for 5 minutes, and, having removed their external coat, beat them with the sugar and gum, in a mortar, into a coarse powder; add the water gradually, and triturate so as to form an uniform mixture. Finally strain through muslin.

Edin. Ph. 1841. *Mistura acaciæ.*

℞ Mucilage	℥iij.
Sweet almonds	ʒx.
Pure sugar	ʒv.
Water	Oij.

Steep the almonds in hot water, and peel them: beat them to a smooth pulp in an earthenware or marble mortar, first

pan, or other vessel, when the oil runs out, and may be collected and filtered to separate any solid particles. Cod liver oil contains a trace of *iodine* and *bromine*, which, however, is too small to be of any activity as a medicine. It is employed internally as a remedial agent in *rheumatism* and *scrofula*, and especially in *phthisis*, for which it is probably the most valuable remedial agent ever known.

Oleum morrhuæ cum quina. Cod-liver oil with quinine.

Mr. Bastick has suggested a solution of quinine in cod-liver oil, which is sometimes used by medical men. It is prepared as follows:—Pure quinine (obtained by precipitating a solution of sulphate of quinine with ammonia, collecting the precipitate, washing and finally drying it) is added, in fine powder, to cod-liver oil, in the proportion of about 2 grains to the ounce, and exposing the mixture to the heat of a water-bath, stirring it constantly until the quinine is dissolved.

Some of the quinine is precipitated from this solution after it has been kept for some time.

Oleum juglandis. *Oleum nucum juglandis. Oil of walnuts.*

Obtained by expression from *walnuts*, the fruit of *Juglans regia*. It makes good plaisters, but will not keep; used by painters, it is very drying; 90 lbs. avoir. of kernel yield 20 to 24 quart bottles of oil. When cold-drawn it is eaten with salads.

Oleum juniperi. *Oil of juniper.*

This oil is obtained by submitting the fruit, tops, or wood of *Juniperus communis* to distillation with water. The full-grown green fruit yields more than the ripe fruit, for in the act of ripening a portion of the oil becomes converted into resin. It is limpid and colourless, or has a slight shade of yellow. Its specific gravity is 0·911. It has the well-known smell and taste of juniper berries. Spirit impregnated with it constitutes the well-known *Geneva* of the Dutch. It is said to be sometimes adulterated with oil of turpentine. This fraud may be detected by taking the specific gravity of the oil, which would be lighter than that above given, if mixed with oil of turpentine. According to Blanchet, it consists of two isomeric oils; one colourless and more volatile, sp. gr. 0·8592; the other coloured and less volatile, sp. gr. 0·8784. The composition of oil of juniper is analogous to that of oil of turpentine, being C^{10} H^8. The physiological effects of oil of juniper are similar to those of the terebinthinate substances.

SYNONYMES.

Oleum e baccis juniperi. Lond. Ph. 1721.

Oleum essentiale e baccis juniperi. Lond. Ph. 1746.

Oleum lapidum prunarum. *Oil of plum-stones.*

This is extracted by expression from the kernels of the common plum (*Prunus domestica*). It is limpid, of a yellowish-brown colour, inodorous, and possesses a taste analogous to that of oil of almonds. At 60° its specific gravity is 0·9127; it freezes at 16°. It easily goes rancid. It is one of the best oils for burning.

Oleum lateritium. *Oil of bricks.*

Heat bricks to redness, and quench them in olive oil; when they have imbibed the oil as much as they will, break them into small pieces, put them into a retort, and distil with the heat of a sand-bath. The oil which passes over is to be separated and preserved.

Oleum lathyris. *Oil of garden spurge.*

From *Euphorbia lathyris*. Cathartic, dose from gutt. iv. to viii.; 14 oz. of seeds yield 6 oz. of oil, by pressure.

Oleum lauri. *Oleum laurinum. Oil of bay.*

Obtained from either the fresh or dried berries of *Laurus nobilis*; from the former by bruising and boiling, then pressing through a sack; the oil floats on the surface, and when cold is of a butyraceous consistence. It is obtained from the dried berries, by exposing them to the vapour of water until thoroughly soaked, and then rapidly pressing them between heated metallic plates. By the latter method they yield one-fifth of their weight of oil. It is imported in barrels from Trieste. It has a greenish colour and the odour of the berries. It is occasionally employed in sprains and bruises, but its principal use is in veterinary medicine.

Oleum lauri volatile. *Volatile oil of laurel berries. Oil of sweet bay.*

Is obtained by distilling the berries with water. The crude oil is pale yellow, transparent, readily soluble in alcohol and ether. By redistillation it yields two isomeric oils, (C^{20} $H^{16}O$,) one having a specific gravity of 0·857, the other 0·885, while a brown balsamic matter remains in the retort.

Oleum lauro-cerasi. *Volatile oil of the cherry laurel.*

By distillation with water, cherry laurel leaves yield a volatile oil and a distilled water (*aqua lauro-cerasi*). Cherry-laurel oil is pale yellow, heavier than water, and like the volatile oil of bitter almonds contains *hydrocyanic acid* and *hydruret of benzoyle*. When exposed to air it attracts oxygen and deposits benzoic acid; oil of vitriol colours it red. It appears to be a weaker poison than the oil of bitter almonds, with which, according to Robiquet, it agrees in all its chemical properties.

Oleum lavandulæ. *Oleum lavandulæ veræ. English oil of lavender.*

Prepared by distilling lavender flowers with water. It has a pale yellow colour, a hot taste, and very fragrant odour. Its specific gravity varies from 0·877 to 0·905. The lightest is the best. Its formula is C^{15} H^{14} O^2. One pound of oil is obtained from 50lbs. to 70lbs. of the flowers. When the stalks and leaves are distilled with the flowers, the odour of the oil is considerably deteriorated. Its chief use is as a perfume, though medicinally it is stimulant and stomachic, in doses of from gtt. ij to gtt. v.

SYNONYMES.

Oleum florum lavandulæ.—Lond. Ph. 1721.

Oleum essentiale ex floribus lavendulæ. Lond. Ph. 1746.

Oleum essentiale lavendulæ.—Lond. Ph. 1788.

Oleum limonum. *Essential oil of lemon-peel. Essence of lemons.*

This oil is usually procured by expression from the rind of the lemon, the fruit of the *Citrus limonum*, and is then somewhat turbid and liable to undergo change by keeping, owing to the mucilaginous matter which it contains in solution. It may also be obtained by distillation, when it is pure and not so liable to change from keeping, but its flavour is less pleasant and sweet. It is imported chiefly from Portugal and Italy, though some is procured in France. When quite pure it is colourless, fragrant, and limpid, and has a specific gravity of 0·847 at 70° F. It is soluble in all proportions in absolute alcohol, but spirit of wine, of the specific gravity of 0·847, dissolves only 14 per cent. of it at 60°. Oil of lemons is isomeric with oil of turpentine, being composed of C^{10} H^8.

Oleum liliarum. (P. L. 1679.) *Oil of white lilies.*

Obtained by infusing the flowers of *Lilium candidum* in olive oil, exposing it to the sun for a week, and then straining.

Oleum lini. *Linseed oil.*

Obtained by expression from the ripe

Lond. Ph. 1851, and Edin. Ph. 1841.

℞ Myrrh, powdered . . . ʒij.
Carbonate of potash . . ʒj.
Rose-water . . . . f ʒxviij.
Sulphate of iron, powdered ℈ijss.
Spirit of nutmeg . . . f ʒj.
Sugar . . . . . ʒij.

Rub together the myrrh with the spirit of nutmeg and the carbonate of potash, and to these, while rubbing, add first the rose-water with the sugar, then the sulphate of iron. Put the mixture immediately into a proper glass vessel, and stop it.

Dubl. Ph. 1850.

℞ Myrrh, in powder . . . ʒj.
Pure carbonate of potash . ʒss.
Essence of nutmeg . . . f ʒj.
Rose-water . . . . f ʒviij.
Refined sugar . . . . ʒj.
Sulphate of iron . . . ʒss.

Triturate the myrrh and carbonate of potash with the sugar, spirit of nutmeg, and 7 ounces of the rose-water, the latter being gradually added, until a uniform mixture is obtained; to this add the sulphate of iron, previously dissolved in the remaining ounce of rose-water, and enclose the mixture at once in a bottle, which should be tightly corked.

Med. Use.—In cases of hysteria and chlorosis, a most valuable tonic.

Dose.—f ʒj. to f ʒij.

SYNONYME.

Griffith's green mixture.

Mistura gentianæ composita. *Compound mixture of gentian.*

Lond. Ph. 1851.

℞ Compound infusion of gentian f ʒxij.
Compound infusion of senna f ʒvi.
Compound tincture of cardamom . . . . . f ʒij

Mix.

Med. Use.—Tonic and purgative.

Dose.—f ʒj. to f ʒij.

Mistura guaiaci. *Mixture of guaiacum.*

Lond. Ph. 1851.

℞ Powdered guaicum . . . ʒiij.
Sugar . . . . . ʒss.
Powdered acacia . . . . ʒij.
Water of cinnamon . . . Oj.

Rub the sugar with the guaicum and acacia, and gradually add the water of cinnamon to these, rubbing between.

Edin. Ph. 1841.

The same as the London, except that in the Edinburgh formula 19½ fluidounces of cinnamon water are ordered.

Med. Use.—A stimulating diaphoretic.

Dose.—f ʒss. to f ʒij. two or three times a-day.

SYNONYME.

Lac guaiaci.—Lond Ph. 1788.

Mistura hordei. *Mixture of barley.*

Edin. Ph. 1841.

℞ Pearl barley,
Figs, sliced,
Raisins, freed of the seeds, āā ʒiiss.
Liquorice root, sliced and bruised . . . . . ʒv.
Water . . . . . Ovss.

Clean the barley, if necessary, by washing it with cold water; boil it with 4½ pints of the water down to two pints; add the figs, raisins, and liquorice root, with the remaining pint of water; and again boil down to two pints; then strain.

Med Use.—An agreeable drink in febrile affections.

SYNONYMES.

Decoctum hordei compositum. Edin. Ph. 1830.

Pectoral decoction.

Mistura moschi. *Mixture of musk.*

Lond. Ph. 1851.

℞ Musk,
Acacia, powdered,
Sugar, āā . . . . . ʒiij.
Rose-water . . . . . Oj.

Rub the musk with the sugar, then with the acacia, the rose-water being gradually poured in.

Med. Use.—Powerful antispasmodic.

Dose.—℥j. to ℥ij.

SYNONYMES.

Julepum e moscha. Lond. Ph. 1746.

Mistura moschata. Lond. Ph. 1788.

Mistura oleoso-balsamica. *Oleo-balsamic mixture.*

Codex, Medic. Hamberg. 1845.

℞ Oil of lavender,
„ marjoram,
„ cloves,
„ mace,
„ cinnamon,
„ cedrat, āā . . . ♈j.
„ rue . . . . . gtt. x.
Balsam of Peru . . . ℥ss.
Rectified spirit . . . . ℥x.

Macerate in a cold place, and filter.

Mistura salina. *Saline mixture.*

No. 1.

℞ Fresh lemon-juice . . . f℥ij.
Carbonate of potash . . gr. lxxvj.
or. q. s.
Distilled water . . . f℥ij.

Neutralize the lemon-juice with the carbonate of potash, and add the distilled water.

No. 2.

℞ Citric acid . . . . . ℥j.
Carbonate of potash . . gr. lxxvj.
Distilled water . . . ℥iv.

Mix.

Med Use.—Antispasmodic.

Dose.—f℥j. to f℥ij.

Mistura scammonii. *Mixture of scammony.*

Edin. Ph. 1841.

℞ Resin of scammony . . gr. vij.
Unskimmed milk . . . f℥iij.

Triturate the resin with a little of the milk, and gradually with the rest of it, till a uniform emulsion is formed.

Med. Use.—It is one of the most agreeable purgative draughts that can be taken.

Mistura spiritus vini gallici. *Mixture of spirit of French wine. Brandy mixture.*

Lond. Ph. 1851.

℞ Spirit of French wine, (brandy,)
Cinnamon water, āā . f℥iv.
The yolks of two eggs,
Purified sugar . . . ℥ss.
Oil of cinnamon . . . ♏ij.

Mix.

Med. Use.—Stimulant, and restorative. Given in the sinking state of low fever.

Dose.—f℥ss. to f℥ij.

Moiree metallique,

Commonly called crystallized tin-plate, is produced by applying nitro-muriatic acid for a few seconds to the surface of tin-plate, previously heated, then washing off the acid with water, drying the plate and coating it with lacquer.

Molasses,

Is the brown, viscid, uncrystallizable liquor which drains from the sugar in the colonies. In this country treacle is generally sold for it.

Monesia.

A brown astringent extract, said to be made from the bark of the *Chrysophillum Buranheim*, a native of the Brazils, where the monesia is made. It is much esteemed by the Brazilians as an astringent.

Morphia.

The narcotic principle of opium.

Dubl. Ph. 1850.

℞ Turkey opium, cut into thin slices . . . . . ℔j.
Distilled water . . . . Cvj.
Chloride of calcium . . . ℥vj.
Prepared animal charcoal, as much as is sufficient.

Macerate the opium for 24 hours with a quart of the water, and decant. Macerate the residue for 12 hours with a second quart of the water; decant and repeat this

process with the rest of the water, subjecting the insoluble residuum to strong expression. Let the decanted solutions and expressed liquor be evaporated by a steam or water heat to the bulk of 1 pint, and then passed through a calico filter. Pour in now the chloride of calcium, first dissolved in 4 ounces of distilled water, and then proceed with the evaporation until the solution is so far concentrated, that upon cooling nearly the whole of it becomes solid. Let this solid matter be enveloped in a couple of folds of strong calico, and subjected to powerful pressure, the dark liquid which exudes being reserved for subsequent use. The squeezed cake is now to be acted upon with about half a pint of boiling water, and the whole being thrown upon a paper filter, the precipitate must be well washed. The filtered solution having been evaporated as before, cooled and solidified, the residue is to be again subjected to expression. If the product be not quite white, this process should be repeated a third time, the liquid forced out during expression being always preserved. Let the squeezed cake be dissolved in 6 ounces of boiling water, and, if necessary, cleared by filtration through prepared animal charcoal, the portion of it soaked by the filter being carefully washed out of it; and to the solution thus obtained let water of ammonia be added, in slight excess, and let the crystalline precipitate which forms when the liquor has cooled be collected on a paper filter, and washed with cold distilled water until the washings cease to give a precipitate upon being dropped into an acid solution of nitrate of silver. Lastly, let the filter be transferred to a porous brick, in order that the morphia it contains may become dry.

The liquids separated by expression from the muriate of morphia, in the preceding process, having been diluted with water so as to occupy the bulk of 4 ounces, and then supersaturated slightly with ammonia, let the precipitate which forms be collected after the lapse of 6 hours on a filter, and washed with a little cold water. This, if redissolved in dilute muriatic acid, boiled with a little animal charcoal, and filtered, will, upon cooling, afford a crystalline deposit, from which, when pressed, dissolved in water, and supersaturated with ammonia, an additional quantity of morphia will be procured.

Morphiæ acetas. *Acetate of morphia.*

Lond. Ph. 1851.

Note.—It is dissolved in water and in rectified spirit. Then, when the spirit has been distilled, it goes into crystals which perish in the fire. Nitric acid being added, it first reddens and afterwards becomes yellow. Tincture of sesquichloride of iron affects it with a blue colour. Recently prepared chlorine being first added, and afterwards ammonia, a brown colour arises, which, when more of the chlorine shall have been added, flies off. Morphia is thrown down by the solution of potash which, being added in an excess, it is dissolved again.

Edin. Ph. 1841.

Take of muriate of morphia any convenient quantity. Dissolve it in fourteen times its weight of warm water, and, when the solution is cool, add aqua ammoniæ gradually, and with constant agitation, until there is a permanent but faint odour of ammonia in the fluid. Collect the precipitate on a calico filter, wash it moderately with cold water, and dissolve it by means of a slight excess of pyroligneous acid in twelve parts of warm water for every part of muriate of morphia that was used. Concentrate the solution over the vapour-bath, and set it aside to crystallize. Drain and squeeze the crystals, and dry them with a gentle heat. More acetate of morphia may be obtained on concentrating the mother-liquor.

Note.—One hundred measures of a solution of ten grains in half a fluidounce of water and five minims of acetic acid, heated near to 212° and decomposed by a faint excess of ammonia, yield by agitation a precipitate which, in twenty-four hours, occupies 15·5 measures of the liquid.

Dubl. Ph. 1850.

℞ Morphia, in fine powder ℥j.
Rectified spirit. . . f ℥viij.
Acetic acid of commerce (sp. gr. 1044) f ℥ivss, or as much as is sufficient.

Pour the spirit on the morphia, and, applying heat, gradually add the acetic acid, until a neutral or slightly-acid solution is obtained. Let this be evaporated to the consistence of a syrup, by a steam or water heat, and then set by for a few days, until it solidifies. In operations on the great scale it will be worth while to remove the spirit by distillation.

Med. Uses.—*Dose*, from one-eighth gr. to one-fourth gr. The advantage of this preparation over opium is that it occasions neither headache nor sickness.

Morphiæ hydrochloras. *Hydrochlorate of morphia.*

Lond. Ph. 1851.

Note.—It is dissolved in rectified spirit and in water. That which is thrown down from this water by nitrate of silver is neither all dissolved by ammonia, unless added in excess, nor by hydrochloric nor nitric acid being added. It corresponds to the acetate of morphia as regards the rest above noted.

Edin. Ph. 1841. *Morphiæ murias.*

℞ Opium . . . . . ℥xx.
Water . . . . . Oviij.
Muriate of lime. . . . ℥j., or a slight excess.

Macerate the opium in fragments for twenty-four hours in two pints of water; and separate the infusion, squeezing well the residue. Repeat the maceration successively with two pints more of the water, till the whole is made use of. Concentrate the whole infusions over a vapour-bath, to one pint, and add the muriate of lime dissolved in four fluidounces of water. Set the whole aside to settle; pour off the liquid; wash the sediment with a little water, adding the washings to the liquid. Evaporate the liquid sufficiently in the vapour-bath for it to solidify on cooling. Subject the cooled mass to very strong pressure in a cloth; re-dissolve the cake in a sufficiency of warm distilled water; add a little fine powder of white marble, and filter; acidulate the filtered fluid with a very little muriatic acid; and concentrate a second time in the vapour-bath for crystallization. Subject the crystals again to very strong pressure in a cloth. Repeat the process of solution, clarification by marble and muriatic acid, concentration, and crystallization, until a snow-white mass be obtained.

On the small scale, trouble and loss are saved by decolorizing the solution of muriate of morphia by means of a little purified animal charcoal after two crystallizations. But on the large scale it is better to purify the salt by repeated crystallizations alone, and to treat all the expressed fluids, except the first, in the same way with the original solution of impure muriate of morphia. An additional quantity of salt may often be got from the first dark and resinous fluid obtained by expression, on merely allowing it to remain at rest for a few months, when a little muriate of morphia may be deposited in an impure condition.

The opium, which yields the largest quantity of precipitate by carbonate of soda, yields muriate of morphia not only in greatest proportion, but likewise with the fewest crystallizations.

Note.—Snow-white; entirely soluble; solution colourless; loss of weight at 212° not above 13 per cent.; 100 measures of a solution of ten grains in half a fluidounce of water, heated near to 212°, and decomposed with agitation by a faint excess of ammonia, yield a precipitate which in twenty-four hours occupies 12·5 measures of the liquid.

Dubl. Ph. 1850. *Morphiæ murias.*

℞ Morphia, in fine powder . ℥j.
Pure muriatic acid . . . f ℥ivss, or a sufficient quantity.
Distilled water . . . . ℥iiss.

Mix the acid with the water, heat to about 200°, and add the morphia, constantly stirring, so that a solution may be formed, having a slightly acid reaction. Set this to cool for 12 hours, and let the crystals which separate be drained of the liquor which surrounds them, and dried on blotting-paper. The decanted liquor will, by further concentration and cooling, give additional crystals.

Med. Use—In all cases where opium is advisable.

Dose.—$\frac{1}{4}$ to $\frac{1}{2}$ a grain.

Morphiæ iodidum. *Iodide of morphia.*

℞ Dry acetate of morphia	120 parts.
Cold distilled water. .	960 „
Iodide of potassium . .	60 „

Dissolve the acetate of morphia in the water, aiding the solution by adding a few drops of acetic acid. Then filter the solution and add the iodide of potassium, previously dissolved in a small quantity of water. After a short time the iodide of morphia will crystallize out. Larger crystals may be obtained by warming the solution over a water-bath, and allowing it to cool slowly.

Morphiæ sulphas. *Sulphate of morphia.*

U. S. Ph. 1840.

℞ Morphia, in powder . . .	ʒj.
Distilled water	Oss.
Diluted sulphuric acid, a sufficient quantity.	

Mix the morphia with the water, then carefully drop in the acid, constantly stirring till the morphia is saturated and dissolved. Evaporate the solution by means of e water-bath, so that it may crystallize on cooling. Dry the crystals on bibulous paper.

Morsuli antimonialis.

Ph. Saxonica, 1837.

℞ Sugar	ʒvj.
Water	ʒiv.
Prepared sulphuret of antimony	ʒj.
Cinnamon powder . . .	℈iv.

Boil the sugar in the water to a tabular consistence, then mix in the other ingredients, put the mass into wooden forms, and cut while warm into longish tables of equal size.

Ph. Suecica, 1845.

℞ Cinnamon	ʒij.
Prepared sulphuret of antimony	ʒss.
Sweet almonds, cut and peeled	ʒj.
Sugar	ʒvij.

Boil with water to the proper consistence, and make into 16 *morsules*.

Morsuli aromatici.

Ph. Suecica, 1845.

℞ Sugar	℔j.
Ginger	℈j.
Cinnamon	ʒss.
Sweet almonds, peeled and cut	ʒj.
Preserved orange-peel . .	ʒj.
Water	q. s.

Boil the sugar in the water to a tabular consistence, then incorporate the other ingredients and proceed as directed for *Morsuli antimonialis.*

Morsuli citrici.

Ph. Suecica, 1845.

℞ Powdered sugar	ʒiv.
Lemon juice	ʒss.

Mix, and make into lozenges.

Morsuli contra strumam.

Ph. Badens. 1841.

℞ Burnt sponge	ʒij.
Bicarbonate of soda . . .	ʒss.
Ginger, powdered . . .	ʒij.
Cinnamon, powdered . .	ʒij.
White sugar	ʒxxx.

Mix, and make into lozenges.

Morsuli contra vermes. *Worm lozenges.*

Ph. Danica, 1840.

℞ Worm-seed . . . . . ℥j.
Jalap,
Ethiops mineral. . . āā ʒiij.
Cinnamon . . . . . ʒij.
Sugar . . . . . ℥vij.

Melt the sugar in rose-water, and then mix with it the other ingredients, and form it into *morsuli*.

Moschus artificialis. ***Oleum succini oxidatum. Artificial musk. Oxidized oil of amber. Resin of amber.***

Add gradually fʒiij of nitric acid to fʒj of oil of amber; let them stand for 24 hours, and wash the resinous substance which will be formed with water.

Moxa.

A small combustible body, employed for producing *actual cautery*. Moxas have been applied as counter-irritants in cases of gout, rheumatism, &c. They are usually made in the form of small cones or short cylinders, which are placed on the skin, ignited, and allowed to burn to the base.

Chinese moxas.

Prepared from the downy portion of the leaves of *Artemisia sinensis*.

European moxas.

Usually made of carded cotton soaked in solution of nitrate or chlorate of potash. The pith of the elder-tree or sun-flower is sometimes used.

Mucilago amyli. ***Mucilage of starch.***

Edin. Ph. 1841.

℞ Starch . . . . . ℥ss.
Water . . . . . Oj.

Triturate the starch with a little of the water; add the rest of the water gradually; then boil for a few minutes.

Dubl. Ph. 1850.

℞ Starch . . . . . ℥ss.
Water . . . . . Oss.

Triturate the starch with the water, gradually added, then boil for a few minutes.

Med. Use.—As a vehicle for more active medicines in the form of enema.

Mucilago cydoniæ. ***Mucilage of quince.***

Ph. Borussica, 1847.

℞ Quince seeds, not bruised . ʒj.
Rose-water . . . . . ℥viij.

Pour the rose-water on the seeds, let them stand for some hours, occasionally shaking, and strain.

Mucilago hordei. ***Mucilage of barley.***

℞ Ground pearl barley . . . ℥ss.
Water . . . . . ℥xvj.

Triturate the barley with the water gradually added, then boil for a few minutes.

Mucilago salep. ***Mucilage of salep.***

Ph. Borussica, 1847.

℞ Salep root, very finely powdered . . . . . ʒj.
Cold water . . . . . ℥ij.
Warm water. . . . . ℥x.

Pour the cold water on the salep root; put in a bottle, and when properly mixed, add the warm water, and shake the vessel until cold.

Mucilago tragacanthæ. ***Mucilage of tragacanth.***

Edin. Ph. 1841.

℞ Tragacanth . . . . . ʒij.
Boiling water . . . . f ʒix.

Macerate for 24 hours, then triturate to dissolve the gum, and express through linen or calico.

Med. Use.—The same as that of the mixture of acacia.

Mundick.

Arsenical iron pyrites are called by this name among the Cornish miners.

Mustard. *Flour of mustard.*

The powdered seeds of the white and black mustard, from which the husks are separated by sifting. The flour of mustard of commerce contains wheat flour, and is coloured with turmeric.

Mustard, ready made, for the table.

No. 1.

℞ Common salt. . . . ℔iss.
Scraped horseradish . . ℔j.
Garlic . . . . . 2 cloves.
Boiling vinegar . . . cong. ij.

Macerate for 24 hours, then strain, and add,

Flour of mustard q. s. to make it of the proper consistence.

No. 2.

℞ Flour of mustard . . . ℔ij.
Common salt . . . . ℔j.
Vinegar, sufficient to make it of the proper consistence.

No. 3.

℞ Flour of mustard . . . ℔ij.
Common salt . . . . ℔j.
Tarragon vinegar. . . Oss.
Best vinegar, sufficient to make it of the proper consistence.

Naphtha.

This term was originally applied to a species of hydrocarbon, which exudes from the ground in certain localities in Persia, Italy, &c. Barbadoes tar is a variety of this kind of naphtha, to which the term petroleum is frequently applied. The term naphtha, however, is now commonly applied to pyroxylic spirit. The last-named substance has been prescribed under the name of naphtha, in cases of incipient phthisis, by Dr. Hastings. It is used as a substitute for spirit-of-wine for dissolving resins, and, mixed with 9 times its volume of rectified spirit, it forms *methylated spirit.*

Naphthaline.

A white crystalline volatile substance obtained in the distillation of coal-tar.

Narcotine.

One of the proximate constituents of opium.

Necklaces. *Anodyne necklaces.*

Are formed of the roots of the henbane, of Job's tears, of allspice steeped in brandy, of jumble-beads, or of elks' hoofs, cut and strung to suit the fancy of the quacks who sell, or of the credulous or superstitious persons who use them. They were supposed to procure easy dentition in children, and sleep to persons affected with fever, but they are now gone almost out of use.

Nests. *Edible birds'-nests.*

The nests of a species of swallow inhabiting the Indian Archipelago; these nests are formed of a mucous slime secreted in the stomachs of these birds, and thrown up for assisting in building their nests. They are white or yellowish, dry and hard, of an insipid taste, something like that of vermicelli. They are added to soups to render them thick, the feathers being separated by straining; and many virtues have been assigned to soup thus prepared, especially by the Chinese, who have been the principal consumers of these nests.

Nickel. *Symb.* Ni. *eq.* 28.

A hard, malleable, greyish-white metal. It occurs chiefly in combination with arsenic, and associated with iron and cobalt. It is not used in medicine; its chief consumption is in the manufacture of *German*, or *Nickel silver*, which is an alloy of copper, zinc, and nickel.

Nicotine. *Symb.* C^{10} H^{8} N.

An alkaloid, liquid and highly poisonous, which is obtained by distilling tobacco with caustic potash.

Novargent.

Preparations are sold under this name for re-silvering plated articles from which the silver has been worn off, and for

coating copper and other metals with silver. They consist of solution of oxide of silver in solution of hyposulphite of soda, or cyanide of potassium. Sometimes the solutions thus formed are mixed with prepared chalk and sold in the form of powder. The solution is rubbed over the metal to be coated with a little chalk; the powder is moistened with water or spirit, and then used in like manner.

Noyaux.

A liqueur made with bitter almonds, from which it acquires its peculiar flavour.

No. 1.

℞ Bitter almonds, blanched ℥iv.
Proof spirit, or gin . . Oij.
White sugar . . . . ℥xij.

Macerate for a fortnight, and strain.

No. 2.

℞ Peach or apricot kernels with the shells, bruised No. 120.
Proof spirit . . . . Oij.
White sugar . . . . ℥xij.

Macerate for a fortnight, and strain.

No. 3.

℞ Bitter almonds . . . ℥iv.
Coriander seeds . . . ℥ij.
Cinnamon,
Mace . . . . . āā ʒj.
Proof spirit, or gin . . Oiv.
White sugar . . . . ℥xxiv.

Macerate for a fortnight, and strain.

Oleum absinthii. *Oil of wormwood.*

Obtained by distillation from *Artemisia absinthium*. Stomachic. Sp. gr. 0·972. (Pereira.) 100℔. fresh herb yield 2 ounces of the oil. (Raybaud.) 100℔. dry herb, recent, yield 16 ounces. (Martius.) 100℔s. dry herb, one year old, yield 8·75 ounces. (Bley.)

Oleum acori. *Oleum calami aromatici. Oil of sweet flag.*

Obtained by distillation from the rhizome of *Acorus calamus*. Sweet scented. 100℔. of the fresh rhizome yielded 16 ounces. (Martius.)

Oleum æthereum. *Ethereal oil.*

Lond. Ph. 1851.

℞ Rectified spirit. . . . Oij.
Sulphuric acid. . . . f℥xxxvj.
Solution of potash,
Distilled water, of each, . f℥j,
or as much as may be sufficient.

Cautiously mix in the acid to the spirit. Let the liquor distil until a black froth may arise; then immediately remove the retort from the fire. Separate the lighter supernatant liquor and expose it to the air for a day. Add the solution of potash previously mixed with the water to this, and shake all together. Lastly separate the well-washed ethereal oil which shall have subsided.

Note.—The specific weight of this is 1·05. Dropped into water it immediately falls, the form of a globule being preserved. It is dissolved in ether; it does not change the colour of litmus into red.

Med Use.—For the preparation of spts. æther. sulph. co.

SYNONYME.

Oleum vini. Oil of wine. Lond Ph. 1788.

Oleum aloeticum. *Oil of aloes.* (Van Mons.)

℞ Socotrine aloes, any quantity.

Distil it till only a carbonaceous mass remains in the retort, and collect the oil which passes over into the receiver.

Under the name of *Batavian aloetic oil*, Cadet de Gassicourt prescribes this formula:—

℞ Oil of olives . . . . . ℔j.
Hepatic aloes, in powder,
Myrrh . . . . . āā ℥ij.
Olibanum . . . . . ℥ss.

Distil from a sand-bath, in a stone retort.

The product of this operation always contains a greater or less quantity of empyreumatic oil.

The oil of aloes has been praised as a vermifuge for children; it is rubbed twice or thrice a day upon the umbilical region.

Oleum amygdalæ. *Oil of almonds. Oil of sweet almonds.*

Obtained by expression from bitter or sweet almonds, usually the former. Its specific gravity appears to vary; Brandes found it to be 0·911; Brisson, 0·917; Saussure, 0·920 at 50° Fahr. The average produce is from 48 to 52lbs. from 1 cwt of almonds. (Pereira.)

Oleum amygdalæ amaræ. *Oil of bitter almonds. Essential oil of almonds.*

Obtained by submitting bitter almond cake (left after the expression of the fixed oil from bitter almonds) to distillation with water, either alone or more usually with salt, previously leaving the cake to soak in the water for a day or more. 25lbs. of cake yield 2 oz. of oil. It is used to communicate flavour to confectionery, &c., but should be cautiously employed, as it is highly poisonous, owing to the presence of hydrocyanic acid. The specific gravity of a sample which had been prepared eight months was 1·0836. (Pereira.)

Oleum anethi. *Oil of dill.*

Obtained by submitting the bruised fruit of dill (*Anethum graveolens*) with water to distillation. Two cwts. of the fruit yield 8lbs. 5 oz. of oil. It is of a pale-yellow colour. Its specific gravity is 0·881. Its odour is peculiar and penetrating, analogous to that of the fruit. Its taste is hot but sweetish. According to Sietzmann, 1440 parts of water dissolve one part of this oil.

Oleum animale empyreumaticum. *Oleum cornu cervi. Animal oil. Dippel's oil. Rectified oil of hartshorn.*

From oil of hartshorn by a slow distillation, in a small retort, saving only the first portion that comes over. It is at first limpid and colourless, but unless secluded from light it soon becomes discoloured, and should therefore be kept in opaque vessels. It is antispasmodic, anodyne, and diaphoretic in small doses, from 10 to 30 drops in water. In large doses, it acts as an energetic poison; externally, it is irritant.

Oleum animale æthereum. *Loco olei animalis dippelii. Ethereal animal oil.*

Ph. Borussica, 1847.

Distil fœtid animal oil in a retort placed in a sand-bath, with a gentle heat, as long as a thin oil comes over, which is to be mixed with four parts of water and again distilled, until colourless or only slightly yellow. Separate it from the water, and keep it in small bottles quite full and well stoppered. It should be clear, free from colour or only a little yellowish, and of a grateful odour.

Oleum animale fœtidum. *Oleum cornu cervi. Fœtid animal oil.*

Ph. Borussica, 1847.

An empyreumatic oil, rather thick, of a brownish-black colour, opaque, and a fœtid odour.

It is obtained in the distillation of bones, horn, &c.

Oleum anisi. *Oil of aniseed.*

Obtained by submitting the fruit of *Pimpinella anisum*, with water, to distillation. Mr. Brande says, that from 1 cwt. of fruit about 2 pounds of oil are obtained. The greater part of the oil used in this country is imported from Germany and the East Indies. When carefully prepared, it is transparent and nearly colourless, having a slightly yellow tinge. Its specific gravity increases with its age. According to Martius, when freshly distilled, its specific gravity was 0·979, but after keeping it for a year and a half, it had increased to 0·9853. It congeals at 50° Fah., and does not liquefy again under 62°. Spermaceti, which is said to be sometimes added to oil of anise to promote its solidification, may be de-

tected by its insolubility in cold alcohol, the oil being soluble in all proportions.

SYNONYMES.

Oleum ex seminibus anisi. Lond. Ph. 1721, 1746.

Oleum essentiale anisi. Lond. Ph. 1788.

Oleum anisi stellati. *Oleum badiani. Oil of star-anise. (Illicium anisatum.)*

Has the odour and taste of the oil of aniseeds, but it preserves its fluidity at 35°·6 F. It is said to be sometimes substituted for the *oleum anisi.*

Oleum anthemidis. *Oleum chamæmeli. Oil of chamomile.*

Obtained by distillation from the flowers and herb of *Anthemis nobilis.* When first drawn it is usually of a green colour, but on exposure to the light and air becomes yellowish brown. There is, however, a variety of chamomile which yields a bright blue oil, and which is not so liable to change colour as the other. 100 ℔s. of the flowers, when recently dried, yield 5·83 ounces, but when kept twelve months, only 3 ounces of oil.

SYNONYMES.

Oleum florum chamæmeli. Lond. Ph. 1721.

Oleum essentiale ex floribus chamæmeli. Lond. Ph. 1746.

Oleum anamirtæ cocculi. *Oil of cocculus indicus.*

Obtained by digesting the seeds in rectified spirit and evaporating the tincture, when the oil collects on the surface; it has a bright green colour, and contains *picrotoxin*, the active principle of the seeds.

Oleum armoraciæ. *Oil of horseradish.*

Obtained by distillation with water from the fresh root of *Cochlearia armoracia.* It is pale yellow; heavier than water, and very volatile. Its odour is exceedingly powerful, and like that of horseradish, one drop is sufficient to infect a whole room. Its taste is at first sweetish, then burning and acrid. It causes inflammation and vesication when applied to the skin. It is slightly soluble in water, easily so in alcohol. 100 ℔s. of the fresh root yield 6·9 oz. of oil. (Raybaud.)

Oleum arnicæ radicum. *Oil of arnica root.*

Codex, Medic. Hamberg. 1845.

Obtained by distillation.

Note.—Yellowish brown, sp. gr. ·94, ℔xvj. yield ʒj. of oil.

Oleum asari. *Liquid volatile oil of asarabacca.*

Obtained by submitting the root of *Asarum europæum* to distillation with water, when three volatile oily matters are obtained, two of which are solid. The liquid oil is yellow, glutinous, lighter than water, and has an acrid, burning taste, and a penetrating odour like that of valerian. It is slightly soluble in water, more so in alcohol, ether, and the oils (volatile and fixed). Its constituents are $C^8 H^4 O$. (Pereira.)

Oleum asphalti. *Oil of asphaltum.*

Plenck's Pharm.

No. 1.

℞ Asphaltum, any quantity.

Let the oil be elicited by dry distillation, and let this be purified by repeated distillation.

Pharm. Wirtem.

No. 2.

℞ Asphaltum, in powder . . ʒvj.
Decrepitated muriate of soda,
Washed sand . . . . āā ʒix.

Distil; collect and rectify the oil which passes over.

Oleum aurantii. *Oil of orange flower. Oil of neroli.*

Procured from the flowers of both the bitter and sweet orange (citrus vulgaris and citrus aurantium), but that from the former is preferred. It is obtained by submitting the flowers, with water, to distillation, and is found floating on the water in the receiver. It has an aromatic and fragrant odour somewhat differing from that of the flower.

Edin. Ph. 1841.

Note.—Aurantii oleum. Volatile oil of the flowers of citrus vulgaris (*Risso, annales du Museum*, xx. *D.C.*); and sometimes of citrus aurantium.—(*Ibid*). *Neroli oil.*

Oleum aurantii folii. *Oil of orange leaf.*

Obtained from the leaves of both the bitter and sweet orange. This, as well as the oil obtained from the orange-berries, is sometimes sold under the name of *essence de petit grain.*

Oleum aurantii corticis. *Oil of orange-peel.*

Obtained from the rind of the bitter and the sweet orange. It is used in perfumery.

Oleum balatinum. *Oil of ben.* (Brugnatelli.)

℞ Ben nuts, blanched, any quantity.

Bruise them in a marble mortar with a wooden pestle; enclose the paste in a woollen bag; express without heat, and strain the oil.

Oleum barosmæ seu diosmæ, *Volatile oil of buchu.*

Yellowish brown, lighter than water; odour, that of the leaves.

Oleum belladonnæ. *Oil of deadly nightshade.*

In Suabia and Wurtemburgh this oil is obtained by expression from the berries of the *Atropa belladonna.* It is limpid, of a yellow colour, insipid, and without smell. Its specific gravity is 0·9250 at 62° F. It freezes at 34° F. In its preparation, it is necessary to guard against the emanations of the oil, which cause headache. The marc retains much of the narcotic principle of the fruit, and would therefore be unfit for giving to cattle. In Wurtemburgh the oil is used in lamps. In medicine it is applied to bruises. (Dumas.)

Oleum benzoini. *Oil of Benjamin.*

Obtained by distilling by a strong fire the residuum left after the sublimation of benzoic acid. It is used in making an imitation of Russia leather.

Oleum bergamii. *Oleum bergamoti. Essence of bergamot. Volatile oil of bergamot.*

It may be obtained either by expression or by distillation from the rind of the *citrus bergamia.* It is of a pale greenish-yellow, very fragrant, and has a specific gravity of 0·885. Its composition is identical with that of oil of lemons, being C^{10} H^{8}. It is imported from the south of Europe.

Oleum betulæ. *Birch oil.*

Obtained by placing the inner bark of the birch in an earthen pot, the mouth of which is inverted over, and luted to, another pot sunk in the ground; then kindling a fire round the upper pot. The products of the distillation, which consist of volatile and resinous matters, are condensed and collected in the lower pot, which serves as a receiver. It is used in the manufacturing of Russia leather, and gives to it its peculiar smell.

Oleum bezoardicum. *Wedels oil.*

℞ Camphor	ʒij.
Oil of almonds	℥ij.
Oil of bergamot	ʒss.

Alkanet root sufficient to colour it.

Oleum buxi. *Oil of box.*

By distillation, from box wood (*Buxus sempervirens*) without any addition; it is resolvent.

Oleum cacao. *Cocoa oil. Butter of cacao.*

Ph. Batava.

Roast the seeds of *Theobroma cacao*, or chocolate nuts, over a gentle fire, so that they may be more readily divested of the skin. Then let them be bruised into powder, and being enclosed in a linen bag, let them be exposed to the vapour of boiling water, and after the vapour has thus intimately penetrated the whole mass, let the bag be consigned to a press moderately heated. The butyraceous oil expressed by these means is to be melted by a gentle fire, strained through a linen cloth, and then digested in warm water for some hours, to purify it from foreign matter.

Oleum cadinum. *Huile de-cade.*

Obtained from *Juniperus oxycedrus*, used as tar.

Oleum cajuputi. *Oleum melaleucæ. Cajuput*, or *Kyapootie oil.*

It is prepared in the East Indies by distilling the dry leaves of *Melaleuca minor* with water. It is said to be chiefly prepared at Banda. Its colour is green. It boils at 343½°. Its composition is $C^{10}H^{9}O$. It is a powerful antispasmodic, diffusible stimulant, and sudorific, and in India is much used as a medicine, both externally and internally.

Oleum cantharidis. *Oleum cum cantharidibus. Oil of cantharides.*

Codex, Ph. Franç. 1839.

℞ Cantharides in coarse powder . . . . . ℥ij.
Olive oil . . . . . ℥xvj.

Digest for six hours, with the heat of a water-bath, then press and filter.

An oil may be obtained from cantharides by treating the flies with ether, and evaporating the solution until the ether has been driven off. This oil contains the *Cantharidine*, or active principle of the fly, and is a powerful vesicatory.

Ph. Suecica, 1845.

Oleum cantharidum infusum.

℞ Cantharides, powdered . . ℥ij.
Olive oil . . . . . ℥viij.

Macerate in the water-bath for 24 hours; then strain through linen, press, and filter through paper.

Oleum camphoræ. See *Linimentum camphoræ.*

Oleum camphoræ. *Oleum camphoræ nitricatum. Nitric oil of camphor.*

Obtained by dissolving large quantities of camphor in nitric acid. The solution separates into two portions; that which contains the camphor, and most of the acid, floats upon the top of the other, in the form of a very pale yellow-coloured oily fluid, to which the above name has been applied. It is soluble in alcohol.

Oleum camphoræ. *Camphor oil. Liquid camphor.*

Obtained by making deep incisions into the trunk of *Dryobalanops aromatica*, with an axe. The oil gushes out, and is received into bamboes and other proper vessels. It is sometimes perfectly limpid, transparent, and colourless; but it is generally more or less yellowish or brownish. Its odour is somewhat analogous to that of oil of cajuputi, combined with the odour of camphor and cardamoms. According to Pelouze, it is composed of $C^{20}H^{16}$. By exposure to air it rapidly oxidizes. It has been employed in the manufacture of scented soap.

Oleum cannabis. *Oil of hempseed.*

This oil is obtained by expression from the seeds of *Cannabis sativa*. When fresh drawn it is greenish-yellow, but becomes yellow by keeping. Its smell is disagreeable, but it has little taste. It dissolves in all proportions in boiling alcohol; but cold alcohol dissolves only the 30th of its weight. At 5° Fahr. it becomes thick, and at —17° it freezes like oil of walnuts. It is used for lamps in Russia and other countries. It is also used in the manufacture of soap, and in varnishes.

Oleum cardamomi. *Oil of cardamom seeds.*

Obtained by distilling cardamoms with water.

Oleum carlinæ. *Oleum radicis carlinæ.*

Obtained from the root of the carline thistle; fragrant; sinks in water.

Oleum carui. *Oil of caraway.*

Obtained by submitting the bruised fruit of *Carum carui* to distillation with water. The quantity obtained from a given weight of fruit is variable; according to Recluz, about 4·7 per cent., but 5·43 per cent. has been obtained. When fresh prepared, it is colourless; but it becomes yellow and subsequently brown by keeping. It is limpid, and has the aromatic odour of the fruit and an acrid taste; its specific gravity is 0·950. It is aromatic, stimulant, and carminative.

SYNONYMES.

Oleum e seminibus carui.—Lond. Ph. 1721.

Oleum essentiale ex seminibus carui.—Lond. Ph. 1746.

Oleum essentiale carui. — Lond. Ph. 1788.

Oleum caryophyllorum. *Oil of cloves.*

Obtained by submitting cloves (*the unexpanded flowers of Caryophyllus aromaticus*) to repeated distillation with water. It is one of the least volatile, and most difficult to distil of all the volatile oils. It has the well-known smell of cloves, and a hot disagreeable taste. It is colourless or light yellow when fresh, but the colour deepens by keeping, and at length becomes a dark brown. Its specific gravity varies from 1·055 to 1·061. It is soluble in alcohol, ether, and concentrated acetic acid. On an average cloves yield (when subjected to repeated cohobations) from 17 to 22 per cent. of volatile oil. It is sometimes used to relieve toothache, but its more frequent use is as an addition to purgatives.

Oleum cassiæ. *Oil of cassia. Oil of Chinese cinnamon.*

Obtained from cassia-lignea by distillation with water. Its properties and composition, together with its effects and uses, are similar to those of oil of cinnamon, to which, however, it is inferior in odour and flavour. It is usually of a pale yellow colour. About 12 oz. of oil are obtained from 100 lbs. of bark.

Oleum cebadillæ. *Oil of cebadilla.*

Is a green fatty matter procured from the *Asagræa officinalis;* it is lighter than water, and has a faint, somewhat rancid taste.

Oleum cedri. *Oleum citri. Oil of cedrat. Essence of cedrat.*

(1.) The oil first obtained by distillation from the yellow part of citron-peel (*Citrus medica*); it is colourless, very thin and fragrant.

(2.) The second oil obtained by the distillation of the yellow part of citron-peel; greenish; 100 citrons yield 1 oz. of the white oil, and ½ oz. of the greenish. It may also be obtained by expression.

Oleum ceræ. *Oil of wax.*

When bees'-wax is distilled a concrete substance comes over (butter of wax), which by re-distillation yields a liquid oil

(oil of wax). The wax is sometimes mixed with an equal weight of lime to facilitate the distillation.

Oleum cetacei. *Spermaceti oil. Sperm oil.*

Found in a large cavity of the upper jaw of the whale, (*Physeter macrocephalus*,) mixed with spermaceti, from which it is separated by filtration. It is a clear and remarkably thin oil, and is peculiarly adapted for heavy machinery, where there is very rapid motion, as it does not become thick and viscid, like some other oils. It is also much used for burning, as it gives a good light, and produces very little smell. A gallon of the oil weighs about 8¾ lbs.

Oleum chartæ. *Oil of paper. Rag oil.*

Bate directs this oil to be made by burning paper on a tin plate, and collecting the oil which is condensed on the cold metal. A better arrangement than this might be contrived for collecting the oil. It was formerly much esteemed as a remedy for alopecia, or the falling off of the hair; also for toothache, earache, &c.

Oleum chærophylli. *Oil of chervil.*

(Pharm. Wirtem.)

℞ Fresh herb of chervil	.	25 parts.
Water	75	„
Muriate of soda . . .	3	„

Macerate for 3 days, then distil, and separate the oil from the water.

Oleum chenopodii. (U. S.) *Oil of wormseed.*

This oil is distilled from the *Chenopodium anthelminticum*, and is peculiar to the United States. When recently distilled, it is of a light yellow colour, but becomes deeper, and even brownish, by age. It possesses in an eminent degree the peculiar flavour of the plant. Its specific gravity is 0·908. It is used as an anthelmintic, in doses of from 4 to 8 drops for a child, morning and evening, for 3 or 4 days, followed by a brisk cathartic.

Oleum cinnamomi. *Oleum cinnamomi veri. Oil of cinnamon.*

Obtained in Ceylon by macerating the inferior pieces of the bark of *Cinnamomum zeylanicum* reduced to a coarse powder, in sea-water for a few days, when it is submitted to distillation. As imported, the colour of the oil varies from yellow to cherry-red. The paler varieties are most esteemed; hence London druggists frequently submit the red variety to distillation, when 2 pale yellow oils are obtained; 1 lighter, (amounting to about ¼ of the whole,) the other heavier than water. The loss by this process is about 10 per cent. The quantity of oil obtained from 11 lbs. of bark is 1 oz.

Oleum citriflorum. *Oil of citron flowers.*

Obtained by distillation from the flowers of the *Citrus medica*. It is amber coloured and slightly fragrant. 60 lbs. of the flowers yield 1 oz. of oil.

Oleum cocois nuciferæ. *Oil of cocoa-nut. Butter of cocoa-nut.*

This oil is obtained by expression from the kernel of the cocoa-nut, the fruit of the *Cocos nucifera*. It is white, and of a pretty hard consistence. Of late years it has been employed, in considerable quantity, in this country, in the manufacture of soap, as a substitute for tallow. It contains elain and stearin, the latter of which is used as a substitute for wax in making candles; for which, on account of the high temperature requisite to fuse it, it answers very well.

Oleum de colza. *Oil of colza.*

This is a superior kind of rape-seed oil, extracted from the seeds of a variety of the *Brassica campestris*. It is used in

lamps, and has a specific gravity of 0·9136 at 59°. The seeds yield 39 per cent. of their weight of oil.

Oleum conii. *Oil of hemlock.*

Codex, Ph. Franç. 1839.

℞ Fresh leaves of hemlock . . ℔j.
Olive oil . . . . . ℔ij.

Bruise the leaves, and heat them with the oil over a slow fire, till the moisture of the herb is driven off, then digest them for two hours, and strain, press, and filter.

Oleum contra tæniam chaberti. *Chaubert's oil for tape-worm.*

Ph. Borussica, 1847.

℞ Oil of turpentine . . . . ℥xij.
Fœtid animal oil . . . . ℥iv.

Put them in a glass retort, and distil 12 ounces with a gentle heat, and pour it immediately into small well-stopped bottles.

Note.—It should be of a slightly yellow colour.

Codex, Medic. Hamberg. 1845.

℞ Oil of turpentine . . . . ℔j.
Oil of hartshorn . . . . ℥iv.

Distil together with a moderate heat, until ℥xij have passed over.

Note. — Yellowish, afterwards of a brownish colour, having a highly disagreeable, turpentine odour.

Ph. Suecica, 1845.

Oleum chaberti.

℞ Crude oil of hartshorn . . ℥j.
Turpentine . . . . . ℥iij.

Mix and distil ℥iij.

To be kept in stoppered bottles, in the dark.

Oleum copaibæ. *Essential oil of copaiba.*

Obtained by distilling balsam of copaiba with water. When most of the water has passed over, heat it, return it to the still, and resume the distillation; repeat this process so long as a sensible quantity of oil passes over with the water. From 249 lbs. of balsam, 128 lbs. of volatile oil, and 120 lbs. of resin were obtained. When rectified and freed from water by means of chloride of calcium, it has a specific gravity of 0·878. It is colourless, but possesses an acrid taste, and an aromatic peculiar odour.

Oil of copaiba is isomeric with oil of turpentine, being composed of $C^{10}H^8$. This oil is preferred by some practitioners to any other preparation of the balsam, in doses of from 10 to 20 drops, which may be gradually increased. It may be taken on a lump of sugar.

Oleum coriandri. *Volatile oil of coriander.*

Obtained by distillation from the fruit of *Coriandrum sativum*. It is yellowish, and possesses the medicinal qualities, taste, and agreeable odour of the coriander.

Oleum coryli. *Hazel-nut oil. Nut oil.*

Is obtained from the hazel-nut, the fruit of *Corylus avellana*. It is a very fine oil, sometimes substituted for oil of ben; it is used by painters as a vehicle for their colours.

Oleum croci. *Volatile oil of saffron.*

Obtained by distilling saffron with water. It is yellow, heavier than water, has a burning acrid taste, and is somewhat soluble in water. By keeping, it becomes white, solid, and lighter than water. It is probable that upon it depend the medicinal properties of the saffron.

Oleum crotonis. *Oleum tiglii. Croton oil.*

This oil is obtained by expression from the seeds of *Croton tiglium*. It is partly imported from the East Indies, partly expressed in London. The seeds yield about 30 per cent. of oil, though double this quantity may be obtained by exhausting

them with alcohol or ether. As met with in commerce, it varies from a pale straw-colour to a dark brown. The specific gravity of different specimens varies from 0·947 to 0·953 at 60°.

When genuine, this oil is perfectly soluble in an equal bulk of alcohol, specific gravity ·796, at ordinary temperatures. It is one of the most active drastic purgatives. Its virtue has been stated to be due to a peculiar volatile acid (crotonic acid) which exists in a free, and also in a combined, state in the oil. I have, however, found this acid to possess none of the acrid properties of the oil.

Oleum cumini. *Oleum cymini. Oil of cummin.*

Obtained by submitting the fruit of *Cuminum cyminum* to distillation with water. 16 cwts. of fruit yield about 144lbs. of oil. As usually met with, it is pale yellow and limpid. Its smell is disagreeable; its taste very acrid. It consists of 2 oils, 1 a carbo-hydrogen, called cumen or cymen, $C^{18}H^{24}$; the other, an oxygenated oil, called hydruret of cumyl, $C^{20}H^{11}O^2+H$. It is in the volatile oil that the peculiar properties of cumin reside.

Oleum cubebæ. *Volatile oil of cubebs. Oil of cubebs.*

Prepared by grinding the fruit of *Piper cubeba*, and distilling it with water. Cubebs yield about 10·5 per cent. of a transparent, slightly coloured (when pure, colourless) volatile oil, having a specific gravity 0·929. It has the odour of cubebs, and a hot, aromatic, bitter taste. It is composed of carbon and hydrogen in the same proportions as in oil of turpentine, but its formula is $C^{15}H^{12}$, being half as much again as oil of turpentine. Oil of cubebs is an excellent and most convenient substitute for the powder, in doses of from 10 to 12 drops, gradually increased.

Oleum digitalis. *Oil of foxglove.*

Codex, Ph. Franç. 1839.

Made from foxglove by a similar process to that for oleum conii.

Oleum ergotæ. *Oil of ergot.*

Obtained by submitting the ethereal tincture of ergot, (*Secale cornutum,*) procured by percolation, to evaporation at a gentle heat. Its colour is reddish-brown. Its taste is slightly acrid. It is lighter than water, and insoluble in alcohol.

Oleum exestrense. *Exeter oil.*

Lond. Ph. 1677.

℞ Green oil of elder . . . ℔xvj.
Euphorbium, Mustard,
Castor, Pyrethrium . . āā ℥j.

The original formula had 31 ingredients, which were to be infused in wine and oil, but it is now seldom made. The green oil of elder is usually substituted for it.

Oleum fagi. *Beech-nut, or beech-mast oil.*

Obtained by expression from the fruit of *Fagus sylvatica*. This is a very clear oil, and keeps well. Its specific gravity is 0·9225. When fresh, it is a little acrid, which property it however loses by age or boiling water. It is used in France in cooking, and also for burning. It is sometimes eaten with salads.

Oleum fœniculi. *Oleum fœniculi dulcis. Oil of sweet fennel.*

Obtained by submitting the bruised fruit of *Fœniculum dulce* to distillation with water. 19 cwt. of the fruit (shorts) yield 73lbs. of oil. (Pereira.) This oil is more agreeable, both in taste and smell, than that obtained from wild fennel. It is stimulant and carminative, but is seldom used. The dose is from 2 to 20 drops.

Oleum fœniculi vulgaris. *Oil of common, wild, or bitter fennel.*

This is a pale yellow, limpid oil; specific gravity 0·997; and having the pe-

culiar odour of the fruit. When cooled below 50° it crystallizes. 2 kinds of crystals are formed, the 1 in large plates, heavier than water, and much less volatile than the second, which is lighter than water, and passes over first when both are distilled together; the first is isomeric with oil of anise or $C^{10}H^6O$, the second with oil of turpentine $C^{10}H^8$.

Oleum fœnugræci. *Oil of fœnugreek seeds.*

Codex, Ph. Franç. 1839.

Made from fœnugreek seeds by a similar process to that for Oleum cum cantharidibus.

Oleum filicis maris. *Oleum filicis. Extractum filicis æthereum, seu balsamum filicis. Oil of male fern.*

Obtained by evaporating an ethereal tincture. A pound of the rhizome yielded Soubeiran an ounce and a half of thick black oil, having the aromatic odour of fern. It may also be prepared from the buds. By substituting alcohol for ether, 12 or 13 drachms of oil can be obtained from 2⅔lbs. of the rhizome.

Oleum formicarum. *Oil of ants.*

(Niemann.)

℞ Ants	℥iv.
Olive oil	℥j.

Digest in a moderate heat for 20 days, and strain.

Oleum fuliginis. *Oil of wood soot.*

Lond. Ph. 1746.

Obtained by distillation from wood soot. It is fœtid, formerly used in epilepsy.

Oleum galbani. *Oil of galbanum.*

Ph. Borussica, 1847

℞ Galbanum, cut in pieces .	℔ij.
Water	℔xvj.

Distil, in a retort, as long as the oil comes over free from empyreuma, then separate it.

Note.—It should be of a light yellow colour.

Oleum gaultheriæ. (U. S.) *Oil of partridge berry.*

This oil is used in the United States, and is prepared chiefly in New Jersey. It is directed by the Pharmacopœia to be prepared by distillation from the leaves of the *Gaultheria procumbens;* but the whole plant is usually employed. When fresh it is nearly colourless, but as found in the shops it is of a brownish-yellow or reddish colour. It has a sweetish, slightly pungent, peculiar taste, and a very agreeable characteristic odour, by which it may be readily distinguished from all other officinal oils. It is the heaviest of the known essential oils, having a specific gravity of 1·173. Its boiling point is 412°. It is used chiefly on account of its pleasant flavour to cover the taste of other medicines.

It is said to have the composition $(C^2\,H^3\,O + C^{14}\,H^5\,O^5$ (which is that of *salicylate of oxide of methyle.*

Oleum guaiaci. *Oil of guaiacum.*

Fill a capacious retort with guaiacum raspings, lute a receiver to it, and gradually apply the heat of a sand-bath until a thick empyreumatic oil shall have come over.

Oleum hedeomæ. (U. S.) *Oil of pennyroyal.*

This, although analogous in properties to the European pennyroyal, (*Mentha pulegium,*) is derived from a distinct plant, (*Hedeoma pulegiodes,*) peculiar to North America. It has a light yellow colour, with the odour and taste of the herb. Its specific gravity is 0·948. It may be used as a remedy for flatulent cholic, to correct the operation of griping medicines, and to impart flavour to mixtures. The dose is from two to ten drops.

Oleum helianthi. *Oil of sunflower.*

This is extracted from the seeds of *Helianthus annuus*. It is limpid, of a yellow colour, an agreeable odour, and slight taste. It freezes at 60° Fahr. Its specific gravity is 0·9262 at 59°. It is used as food, and for burning.

Oleum hyoscyami. *Oil of henbane.*

Codex, Ph. Franç. 1839.

Made from henbane by a similar process to that for Oleum conii.

Oleum hyperici. *Balsamum hyperici simplex. Oil of St. John's wort.*

℞ Flowers of St. John's wort, ℥iv.
Olive oil . . . . . ℔ij.

Infuse till the oil is well coloured, then strain.

Oleum hyssopi. *Oil of hyssop.*

Obtained by distillation from *Hyssopus officinalis*. Two cwt. yielded six ounces of oil. It is aromatic, stimulant, and carminative.

Oleum iodureTum. *Iodureted oil.*

No. 1.

℞ Iodine . . . . . gr. lxxv.
Oil of almonds . . . ℥xxxij.

Mix the iodine with the oil and heat the mixture over a water-bath, in an open vessel, until the iodine has dissolved and its colour disappeared.

No. 2.

℞ Iodine . . . . . 5 parts.
Oil of almonds . . 1000 „

Dissolve the iodine in the oil and pass a jet of steam through it, until the mixture is deprived of colour. Five parts more of iodine may now be added, and the mixture again decolorized as before. The oil is now to be washed with a weak alkaline solution to remove any acid, and finally filtered.

This oil was proposed as a substitute for cod-liver oil, on the assumption that the efficacy of the latter depended on the presence of iodine. Its use has not justified the expectations that were formed of it.

Oleum jasmini. *Oil of jasmine. Essence of jasmine.*

Obtained by distillation from the flowers of *Jasminum grandiflorum*, not picked from their cups; yielded in very small quantity; highly fragrant; brought from the East Indies. *Oil of jasmine* is also made by putting jasmine flowers between layers of wool saturated with olive oil, in a covered vessel, exposed to the sun, and afterwards pressing out the oil when it has absorbed the volatile oil of the flowers. The *Essence* is also said to be made by mixing the oil last described with spirit, allowing them to stand together for some time, frequently shaking them, and then separating the spirit from the oil. This method is said to afford an essence more highly charged with the aroma of the flowers than that obtained by distillation.

Oleum jatrophæ curcadis. *Oleum infernale. Oil of jatropha curcas.*

Prepared by expression from the seeds of *Jatropha curcas*. It is a drastic purgative resembling in its properties croton oil, and in large doses is an energetic poison. In India it is used for lamps.

Oleum jecoris aselli. *Oleum morrhuæ. Cod liver oil.*

This oil is obtained from the livers of the common cod, (*Gadus morrhua*,) by exposing them to the sun, when, as the livers corrupt, the oil runs from them, and is collected in a vessel set to receive it; after which it is filtered and exported. As thus prepared it is of a dark-brown colour, owing to the presence of some of the solid matters of the fish in a state of decomposition. But it may be prepared nearly colourless, by exposing the fresh livers of the fish to the heat of a stove not exceeding 200° Fahr., in an earthen

pan, or other vessel, when the oil runs out, and may be collected and filtered to separate any solid particles. Cod liver oil contains a trace of *iodine* and *bromine*, which, however, is too small to be of any activity as a medicine. It is employed internally as a remedial agent in *rheumatism* and *scrofula*, and especially in *phthisis*, for which it is probably the most valuable remedial agent ever known.

Oleum morrhuæ cum quina. Cod-liver oil with quinine.

Mr. Bastick has suggested a solution of quinine in cod-liver oil, which is sometimes used by medical men. It is prepared as follows:—Pure quinine (obtained by precipitating a solution of sulphate of quinine with ammonia, collecting the precipitate, washing and finally drying it) is added, in fine powder, to cod-liver oil, in the proportion of about 2 grains to the ounce, and exposing the mixture to the heat of a water-bath, stirring it constantly until the quinine is dissolved.

Some of the quinine is precipitated from this solution after it has been kept for some time.

Oleum juglandis. *Oleum nucum juglandis. Oil of walnuts.*

Obtained by expression from *walnuts*, the fruit of *Juglans regia*. It makes good plaisters, but will not keep; used by painters, it is very drying; 90 lbs. avoir. of kernel yield 20 to 24 quart bottles of oil. When cold-drawn it is eaten with salads.

Oleum juniperi. *Oil of juniper.*

This oil is obtained by submitting the fruit, tops, or wood of *Juniperus communis* to distillation with water. The full-grown green fruit yields more than the ripe fruit, for in the act of ripening a portion of the oil becomes converted into resin. It is limpid and colourless, or has a slight shade of yellow. Its specific gravity is 0·911. It has the well-known smell and taste of juniper berries. Spirit impregnated with it constitutes the well-known *Geneva* of the Dutch. It is said to be sometimes adulterated with oil of turpentine. This fraud may be detected by taking the specific gravity of the oil, which would be lighter than that above given, if mixed with oil of turpentine. According to Blanchet, it consists of two isomeric oils; one colourless and more volatile, sp. gr. 0·8392; the other coloured and less volatile, sp. gr. 0·8784. The composition of oil of juniper is analogous to that of oil of turpentine, being $C^{10} H^8$. The physiological effects of oil of juniper are similar to those of the terebinthinate substances.

SYNONYMES.

Oleum e baccis juniperi. Lond. Ph. 1721.

Oleum essentiale e baccis juniperi. Lond. Ph. 1746.

Oleum lapidum prunarum. *Oil of plum-stones.*

This is extracted by expression from the kernels of the common plum (*Prunus domestica*). It is limpid, of a yellowish-brown colour, inodorous, and possesses a taste analogous to that of oil of almonds. At 60° its specific gravity is 0·9127; it freezes at 16°. It easily goes rancid. It is one of the best oils for burning.

Oleum lateritium. *Oil of bricks.*

Heat bricks to redness, and quench them in olive oil; when they have imbibed the oil as much as they will, break them into small pieces, put them into a retort, and distil with the heat of a sand-bath. The oil which passes over is to be separated and preserved.

Oleum lathyris. *Oil of garden spurge.*

From *Euphorbia lathyris*. Cathartic, dose from gutt. iv. to viii.; 14 oz. of seeds yield 6 oz. of oil, by pressure.

Oleum lauri. *Oleum laurinum. Oil of bay.*

Obtained from either the fresh or dried berries of *Laurus nobilis*; from the former by bruising and boiling, then pressing through a sack; the oil floats on the surface, and when cold is of a butyraceous consistence. It is obtained from the dried berries, by exposing them to the vapour of water until thoroughly soaked, and then rapidly pressing them between heated metallic plates. By the latter method they yield one-fifth of their weight of oil. It is imported in barrels from Trieste. It has a greenish colour and the odour of the berries. It is occasionally employed in sprains and bruises, but its principal use is in veterinary medicine.

Oleum lauri volatile. *Volatile oil of laurel berries. Oil of sweet bay.*

Is obtained by distilling the berries with water. The crude oil is pale yellow, transparent, readily soluble in alcohol and ether. By redistillation it yields two isomeric oils, (C^{20} $H^{16}O$,) one having a specific gravity of 0·857, the other 0·885, while a brown balsamic matter remains in the retort.

Oleum lauro-cerasi. *Volatile oil of the cherry laurel.*

By distillation with water, cherry laurel leaves yield a volatile oil and a distilled water (*aqua lauro-cerasi*). Cherry-laurel oil is pale yellow, heavier than water, and like the volatile oil of bitter almonds contains *hydrocyanic acid* and *hydruret of benzoyle*. When exposed to air it attracts oxygen and deposits benzoic acid; oil of vitriol colours it red. It appears to be a weaker poison than the oil of bitter almonds, with which, according to Robiquet, it agrees in all its chemical properties.

Oleum lavandulæ. *Oleum lavandulæ veræ. English oil of lavender.*

Prepared by distilling lavender flowers with water. It has a pale yellow colour, a hot taste, and very fragrant odour. Its specific gravity varies from 0·877 to 0·905. The lightest is the best. Its formula is C^{15} H^{14} O^2. One pound of oil is obtained from 50lbs. to 70lbs. of the flowers. When the stalks and leaves are distilled with the flowers, the odour of the oil is considerably deteriorated. Its chief use is as a perfume, though medicinally it is stimulant and stomachic, in doses of from gtt. ij to gtt. v.

SYNONYMES.

Oleum florum lavandulæ.—Lond. Ph. 1721.

Oleum essentiale ex floribus lavendulæ. Lond. Ph. 1746.

Oleum essentiale lavendulæ.—Lond. Ph. 1788.

Oleum limonum. *Essential oil of lemon-peel. Essence of lemons.*

This oil is usually procured by expression from the rind of the lemon, the fruit of the *Citrus limonum*, and is then somewhat turbid and liable to undergo change by keeping, owing to the mucilaginous matter which it contains in solution. It may also be obtained by distillation, when it is pure and not so liable to change from keeping, but its flavour is less pleasant and sweet. It is imported chiefly from Portugal and Italy, though some is procured in France. When quite pure it is colourless, fragrant, and limpid, and has a specific gravity of 0·847 at 70° F. It is soluble in all proportions in absolute alcohol, but spirit of wine, of the specific gravity of 0·847, dissolves only 14 per cent. of it at 60°. Oil of lemons is isomeric with oil of turpentine, being composed of C^{10} H^8.

Oleum liliarum. (P. L. 1679.) *Oil of white lilies.*

Obtained by infusing the flowers of *Lilium candidum* in olive oil, exposing it to the sun for a week, and then straining.

Oleum lini. *Linseed oil.*

Obtained by expression from the ripe

seeds of the *Linum usitatissimum* or common *flax*, which furnish about 22 per cent. of their weight of it. It is usually amber-coloured, but may be rendered quite colourless. It becomes solid at 3°, provided that temperature be continued for several days. It dissolves in 5 times its weight of boiling alcohol, in 40 of cold alcohol, and in 1·6 times its weight of ether. It is principally employed by painters for the mixing of colours, as, when exposed to air, it has the property of drying into a hard transparent varnish, which change is greatly facilitated by boiling the oil either with or without litharge, sugar of lead, or white vitriol. Medicinally, linseed oil is rarely employed internally. Its most ordinary use is for the preparation of *linimentum calcis*.

Oleum lumbricorum. *Oil of earth-worms.*

Edin. Ph. 1744.

℞ Earth-worms, washed . . .	lbss.
Olive oil	Oiss.
White wine	Oss.

Boil them together gently, until the wine is evaporated, then strain the oil.

This oil was originally made by submitting earth-worms to distillation in a retort.

Oleum lupuli. *Oil of hops.*

A greenish-yellow oil, having the smell and taste of hops. It may be obtained by distilling hops with water, or by treating them with ether. It has a sp. gr. ·910. By keeping it becomes converted into a kind of resin.

Oleum macidis. *Oleum macis essentiale. Essential oil of mace.*

Procured by submitting mace (the *arillus* of *Myristica officinalis*) with water to distillation. It is colourless, or pale yellow, lighter than water, and has the flavour and odour of mace. Its composition, effects, and uses, are similar to those of oil of nutmegs.

Oleum madi. *Oil of madia sativa.*

Obtained by expression from the seeds of *Madia sativa*. It is of a more agreeable flavour than the oils obtained from some other *oleiferous plants*. The seeds yield about 20 per cent. of oil.

Oleum marjoranæ. *Oil of sweet marjoram.*

Obtained by submitting the herb (*Marjorana hortensis*) to distillation with water. It is pale yellow, or brownish. It possesses the strong odour and taste of the marjoram. It is tonic and stimulant; 85lbs. of fresh herbs yield 3 oz. 6 dr.

Oleum melissæ. *Oil of balm.*

Obtained from *Melissa officinalis* by distillation with water. It is of a pale yellow colour, and has the peculiar odour of balm. Its specific gravity is 0·975. Oil of lemon is said to be frequently substituted for it. It is tonic and stimulant.

Oleum menthæ piperitæ. *Oil of peppermint.*

Is obtained by distilling the fresh herb (*Mentha piperita*) with water. It is colourless, or nearly so, sometimes having a pale yellow or greenish tint, but becoming reddish by age. It has the penetrating odour of the plant, and a burning aromatic taste, followed by a sensation of cold. Its specific gravity is 0·902. It boils at 365° Fahr., and consists, according to Kane, of $C^{21}\ H^{20}\ O^2$. In a warm, dry, and favourable season, the produce of oil, from a given quantity of fresh herb, is twice as great as it is in a wet and cold season. The largest produce is $3\frac{1}{2}$ drachms of oil from 2 pounds of fresh peppermint, and the smallest about $1\frac{1}{2}$ drachm from the same quantity. *English oil of peppermint* is superior to the foreign. It is carminative, stimulant, and antispasmodic.

SYNONYMES.

Oleum essentiale e foliis menthæ piperitidis.—Lond. Ph. 1746.

Oleum essentiale menthæ piperitidis.—Lond. Ph. 1788.

Oleum menthæ pulegii. *Oil of pennyroyal.*

Is obtained from *Mentha pulegium*. It has a pale colour, a warm taste, and the peculiar odour of the herb. It boils at 395° Fahr. Its specific gravity is 0·925. It is composed, according to Kane, of C^{10} H^{8} O. The fresh herb yields from 1-120th to 1-100th of its weight of oil. It is stimulant, carminative, and antispasmodic, and is used as an emmenagogue.

SYNONYMES.

Oleum herbæ pulegii.—Lond. Ph. 1721.

Oleum essentiale ex foliis pulegii.—Lond. Ph. 1746.

Oleum essentiale pulegii.—Lond. Ph. 1788.

Oleum menthæ viridis. *Oil of spearmint.*

Procured in the same manner as the oil of peppermint from *Mentha viridis*. It is of a pale yellow colour, but becomes reddish by age. It has the odour and taste of the plant, and is lighter than water. Its specific gravity is 0·914. It boils at 320° Fahr., and is composed, according to Kane, of C^{35} H^{28} O. The average produce of the essential oil is not more than the 1-500th part of the fresh herb. It is carminative and stimulant.

SYNONYMES.

Oleum herbæ menthæ.—Lond. Ph. 1721.

Oleum essentiale ex foliis menthæ vulgaris.—Lond. Ph. 1746.

Oleum essentiale menthæ sativæ.—Lond. Ph. 1788.

Oleum millefolii. *Oil of milfoil flowers.*

Obtained by distillation from the flowers of *Achillea millefolium*. 14℔s. of the dry flowers yield ʒiij.

Oleum monardæ. (U. S.) *Oil of horsemint.*

Prepared by distillation from the fresh herb of the *Monarda punctata*. It has a reddish amber colour, a fragrant odour and a warm, very pungent taste. Externally it is a powerful rubefacient, even producing vesication. Internally it is stimulant and carminative.

Oleum e mucilaginibus. *Oil of mucilages.*

Lond. Ph. 1746.

℞ Fresh marsh-mallow root . .	℔ss.
Linseed,	
Fœnugreek seed, āā	ʒiij.
Water	℔ij.
Olive oil	℔iv.

Boil the bruised seeds and root with the water for half an hour over a slow fire; then add the oil, and boil again until the water is entirely evaporated, then carefully decant the oil.

Oleum myristicæ expressum. *Adeps myristicæ. Oleum moschatæ. Expressed oil of nutmegs. Expressed oil of mace.*

Prepared by beating the nutmegs to a paste, which is to be enclosed in a bag, and then exposed to the vapour of water, and afterwards expressing the oil with heated plates. It is of an orange colour, firm consistence, and fragrant odour, like that of the seeds from which it is obtained. It is soluble in 4 parts of boiling alcohol. It is occasionally employed externally in chronic rheumatism and palsy. (See *Ol. nucistæ.*)

Oleum myristicæ. *Oleum nucis moschatæ. Essential oil of nutmeg.*

Obtained by distilling together nutmegs and water. It is usually imported. It is colourless or pale yellow; has the odour and taste of nutmegs, and a viscid consistence. By agitation with water it separates into two oils, one lighter than the water, the other heavier. It is seldom employed medicinally.

OLEUM MYRTI ESSENTIALE. *Essential oil of myrtle. Essence of myrtle.*

This is a fragrant volatile oil, obtained by distillation from the flowers and leaves of *Myrtus communis*. 100lbs. of the fresh leaves yielded from 2½ oz. to 4½ oz.

OLEUM NARCISSI. *Essence of jonquil.*

Used in perfumery.

OLEUM NERVINUM. *Oleum bubulum. Neat's-foot oil. Trotter oil. Nerve oil.*

Obtained by boiling neat's feet in water. Used to soften leather and to oil machinery. It also forms a very good hair oil.

OLEUM NUCIS PINI. *Oil of stone-pine kernels.*

Obtained by expression from the seeds of the *Pinus pinea*. It grows rank very soon. 16lbs. of kernels yield 5lbs. of oil.

OLEUM NUCISTÆ. *Oil of nutmeg.*

Ph. Borussica, 1847.

A fat oil mixed with a volatile oil, of the consistence of suet, of a yellow and white colour, lighter than water, fragrant, and soluble in hot ether, forming a clear solution. It is prepared by expression from the kernels of the *Myristica moschata*, in the East Indies, whence it is brought to this country. (See *Ol. myristicæ expressum.*)

OLEUM OLIVÆ. *Oil of olives. Salad oil. Sweet oil.*

There are four different kinds of olive oil known in the districts where it is prepared—namely,

No. 1.

Virgin oil.

This term is applied, in the district of Montpelier, to that which spontaneously separates from the paste of crushed olives. This oil is not met with in commerce, being all used by the inhabitants of the district.

In the district of Aix, the name is applied to that which is first obtained from the olives, ground to a paste in a mill, and submitted to a slight pressure two or three days after collecting the fruit. A good deal of this oil is found in commerce.

No. 2.

Ordinary oil.

In the district of Montpelier, this oil is prepared by pressing the olives, previously crushed and mixed with boiling water. At Aix, the oil is prepared by pressing the olives which have been used for obtaining the virgin oil, to which it is inferior.

No. 3.

Oil of the infernal regions. (*Oleum omphacinum.*)

The water which has been used in the preceding operations is in some districts conducted into large *reservoirs*, where it is left for many days, during which time any oil which may have remained in the water is separated, but it is only fit for burning.

No. 4.

Fermented oil.

Is obtained by leaving the fresh olives in heaps for some time, and pouring boiling water on them before pressing. This oil, which is much injured by the process, is rarely met with in commerce.

Provence oil (*Oleum provinciale*), the produce of Aix, is most esteemed. *Florence oil* is a very fine kind, imported from Leghorn. *Lucca oil* is imported in jars holding 19 gallons each. *Genoa oil* is another fine kind. *Gallipoli oil* is imported in casks. *Sicily* and *Spanish* are inferior kinds.

As met with in commerce, it is an unctuous fluid of a pale yellow or greenish hue. When good it has scarcely any smell. Its taste is bland and mild. Its

specific gravity at 77° Fahr. is 0·9109, according to Saussure. It is soluble in 1½ times its weight of ether, but very sparingly so in alcohol.

Edin. Ph. 1841.

Note.—Olivæ oleum. Expressed oil of the pericarp of Olea Europea (*L. W. Spr.*); *olive oil.*

When carefully mixed with a twelfth of its volume of solution of nitrate of mercury, prepared as for the Unguentum citrinum, it becomes in three or four hours like a firm fat, without any separation of liquid oil.

SYNONYME.

Oleæ Europæ oleum fixum. Edin. Ph. 1839.

Oleum olivarum oxygenatum. *Oxygenated olive oil.*

Ph. Batava.

℞ Olive oil . . . . . ℥xvi.

Put it into a capacious receiver placed in cold water, or in snow if convenient, and pass chlorine gas through it slowly for several days, or until it has become thick and viscid. It is then to be washed with water, to free it from muriatic acid.

Oleum origani. *Oil of common marjoram. Oil of thyme.*

Obtained by submitting the herb (*Origanum vulgare*) to distillation with water. As imported it has a red colour, of which it may be deprived by redistillation. Its taste is acrid; its odour like that of the plant. It boils at 354° Fahr., and is composed, according to Kane, of C^{50} H^{40} O. Its specific gravity is 0·867. 2 cwts. of the herb yield on an average 1lb. of oil; but it varies exceedingly with the season and culture of the plant. It is powerfully acrid and stimulant, and is frequently mixed with liniments, for sprains, bruises, rheumatism, &c.

SYNONYMES,

Oleum herbæ origani.—Lond. Ph. 1721.

Oleum essentiale ex foliis origani.—Lond. Ph. 1746.

Oleum essentiale origani.—Lond Ph. 1788.

Oleum palmæ. *Oleum cocois butyraceæ. Palm oil.*

It is imported from the western coast of Africa, principally from Guinea, where it is procured by expression from the fruit of *Elais guineensis.* It is solid, of a rich golden yellow colour, a sweetish taste and agreeable odour, somewhat resembling that of the rhizome of the *Florentine iris.* By exposure to light it is bleached. The Africans use it instead of butter. It is emollient, and is occasionally applied to bruises, sprains, &c. Its chief consumption is in the manufacture of soap.

Oleum papaveris. *Poppy oil.*

Obtained by expression from the seeds of *Papaver somniferum.* It is of a yellow colour, without smell, taste not unpleasant. Its specific gravity is 0·9249 at 60°. It freezes at 0°. It is sometimes used as a substitute for olive oil at table; it is also used by painters, its drying properties being increased by the addition of litharge. It has no narcotic properties.

Oleum petrolei volatile. *Essential oil of petrolium.*

(Swediaur.)

℞ Petrolium . . . . . ℔ij.
Water . . . . . ℔iv.

Distil over a slow fire till limpid oil ceases to pass over.

Stimulant and resolvent. Chiefly used externally in arthrodynia and paralysis.

Oleum phosphoratum. *Phosphorated oil.*

Ph. Borussica, 1847.

℞ Phosphorus, dry, and cut into small pieces . . . gr. vj.
Almond oil . . . . . ℥j.

Melt the phosphorus in the oil by the aid of warm water; then agitate until it appears to be dissolved, and when cold decant the clear oil from the residue of the phosphorus.

Dose.—From 5 to 10 drops, maximum dose, 30 drops, in some mucilaginous liquid.

Note.—It should be clear, and free from superfluous phosphorus.

Oleum picis liquidæ. *Oleum pini rubrum. Oil of tar.*

Obtained by distillation from tar. It is a reddish limpid fluid having the odour of tar. By redistillation it may be rendered colourless, and then resembles oil of turpentine. It is occasionally applied to ringworm and scalled head.

Oleum pichurium. *Oleum fabarum pichurium. Oil of sassafras nuts, or pichurim beans.*

Obtained by expression from the seeds of *Nectandra puchury* and *Aydendron cujumary*. It is white, butyraceous, smelling like sassafras: becomes yellowish and tallowy by age. 1 ℔. of the seeds yield about 1½ oz. of oil.

Oleum pimentæ. *Oil of pimento. Oil of allspice.*

Obtained by submitting the fruit of *Eugenia pimenta* to distillation with water. Mr. Whipple obtained, from 8 cwts. of pimento, 41 ℔. 6 oz. of oil, or about 6 per cent. The oil of pimento of commerce is a mixture of two oils, one heavy, the other light, of which the lighter distils over first, thus differing from oil of cloves.

Oleum pimpenellæ.

Obtained by distillation from the roots of *Pimpernel or Common burnet* (*Sanguisorba officinalis.*) It is of a blue colour, and possesses cordial properties.

Oleum piperis. *Volatile oil of pepper.*

Obtained by distillation from common pepper (the fruit or berry of *Piper nigrum*). When pure it is colourless, possessing the odour and taste of pepper, but by keeping it becomes gradually yellow. It is lighter than water, and is composed, according to Dumas, of C^{10} H^{8}, so that it is isomeric with oil of turpentine.

Oleum rapæ. *Brown rape oil.*

Procured by expression from the seeds of the *Brassica campestris oleifera*. It is of a yellowish colour. Its specific gravity is 0·914 ; it freezes at 28° Fahr. It dries slowly, makes a softish soap, and smokes much when burned.

Oleum rapæ refinum. *Refined rape oil. Pale rape oil.*

From brown rape oil, by mixing 2 ℔s. of oil of vitriol and 4℔s. of water, with each cwt. of the oil, beating the whole well together, allowing it to stand for eight or ten days in a warm place, pouring off the oil and filtering through flannel or felt. Used for burning, and sometimes for machinery, &c.

Oleum raphani. *Oil of wild mustard.*

Is obtained by expression from the seeds of *Rhaphanus rhaphanistrum*.

Oleum ravensaræ. *Oil of raventsara.*

Obtained from the leaves of *Ravensara aromatica*, by distillation with water. It is said to be sometimes sold for oil of cloves.

Oleum rhodii. *Oil of rhodium.*

Obtained by distillation from Levant lignum rhodium, the root of Canary rosewood (*Genista canariensis*), 80 ℔s. yielded ʒix; 80 ℔s. of a very resinous old wood yielded 2 oz. It is light yellowish, but by keeping grows red. It is imported from the Levant.

Oleum rhodiolæ. *Oil of rosewort.*

Obtained by distillation from the root of *Rhodiola rosea*. It is of a yellowish colour: 1 ℔. yields ʒj; said to be sold for oil of rhodium, and the water for rose water.

Oleum ricini. *Oleum de kerva. Oleum kervinum. Castor oil. Palma christi oil.*

Obtained by expression from the shelled fruit of *Ricinus communis*. The oil thus obtained is heated with water until the water boils, by which the mucilage and albumen are separated. It is then strained through flannel, and put into canisters. When expressed from the seeds cold, it is quite transparent, and has only a slight tinge of yellow, but when it is obtained by boiling, it has most commonly a deeper shade of yellow. It is viscid; its specific gravity at 77° is 0·9575, according to Saussure. Its taste and smell are very slight. It may be mixed in all proportions with alcohol and ether, thus presenting a remarkable difference from other fixed oils. East Indian castor oil is the principal kind used in this country. It is imported from Bombay and Calcutta, and is of excellent quality. A very fine variety is imported from New York.

Oleum rosæ. *Attar or otto of roses.*

Obtained in the East by distilling roses with water. The attar concretes and floats on the distilled water when cold. Several varieties of the rose are used, as *Rosa damasena* in Northern India, *Rosa moschata?* in Persia, *Rosa centifolia* in England. Polier says, that in a very favourable season 100lbs. of rose leaves will yield about three drachms of attar, if the operation is carefully conducted. It fuses between 84° F. and 86° F. Its sp. gr. at 90° F. is 0·832. At 57° F. 1000 parts of alcohol (sp. gr. 0·806) dissolve 7 parts, and at 72° F. 33 parts of attar. It is usually almost colourless, but Polier says, colour is no criterion of its quality.

Oleum rosaceum. *Oleum rosæ. Oil of roses by infusion.*

Rose petals, not fully blown, picked, heeled, and beat to a pulp, 4 oz., olive oil 1 pint; expose to the sun for a week, press out the oil; repeat the process with fresh roses, then strain the oil for use.

Oleum rosmarini. *Oleum anthos. Oil of rosemary.*

Is prepared by submitting the tops of rosemary (*Rosmarinus officinalis*) to distillation with water. It is transparent and colourless, with the odour of rosemary, and a hot aromatic taste. Its specific gravity is 0·897; it boils at 365° F. It is composed, according to Kane, of C^{45} H^{38} O^{2}. One pound of the fresh herb yields about 1 drachm of the oil. It is seldom taken internally, [though not unfrequently used externally in conjunction with other substances as a stimulating liniment.

SYNONYMES.

Oleum herbæ rorismarini.—Lond. Ph. 1721.

Oleum essentiale ex foliis rorismarini.—Lond. Ph. 1746.

Oleum essentiale rorismarini.—Lond. Ph. 1788.

Oleum rutæ. *Oil of rue.*

Obtained by submitting the herb (*Ruta graveolens*) to distillation with water. From 12lbs. of the leaves gathered before the plant had flowered, Lewis obtained only about ʒiij. of oil; but the same quantity of herb with the seeds almost ripe yielded above ʒj. It is a pale yellow, has a bitterish acrid taste and powerful odour, and a specific gravity of 0·911. It is somewhat more soluble in water than the other volatile oils, and is stimulant, antispasmodic, and emmenagogue.

Oleum sabinæ. *Oil of savin.*

Is obtained by submitting the fresh tops of *Juniperus sabina* to distillation with water. It is a limpid almost colourless liquid, having the unpleasant odour of the plant and a bitter acrid taste. Its specific gravity is 0·915. It is isomeric with oil of turpentine, being composed of C^{10} H^{8}. It has emmenagogue properties.

OLEUM SALVIÆ. *Oil of sage.*

Prepared by distillation with water from sage. (*Salvia officinalis.*)

OLEUM SAMBUCI. *Oleum sambuci viride. Oleum viride. Oil of elder. Green elder oil.*

Elder leaves fresh ℔j., olive oil 2 pints, boil till the leaves are crisp; press out the oil, and let it settle. It is emollient.

SYNONYME.

Oil of swallow.

OLEUM SANTALI. *Oleum santali albi. Oil of sandal wood.*

Prepared by distillation with water from sandal wood (*Sirium myrtifolium*), 1℔ yields 2 drachms. Said to be sometimes sold for oil of rhodium and oil of roses.

OLEUM SASSAFRAS. *Oleum lauri sassafras. Volatile oil of sassafras. Oil of sassafras.*

Obtained by submitting the wood to distillation with water. It is colourless, but when kept becomes yellow or red. Its smell is that of sassafras, its taste hot. It has a specific gravity of 1·094. Water separates it into two oils, one lighter, the other heavier than water. It is stimulant and diaphoretic. Nitric acid renders it orange red.

OLEUM SCORPIONUM. *Oil of scorpions.*

Formerly procured by digesting scorpions in oil, and exposing them to the sun. Said to be diaphoretic and externally emollient.

OLEUM SERPYLLI. *Huile de tain. Oil of lemon thyme.*

Obtained by distilling *Thymus serpyllum* with water. 100lbs. of the fresh herb yield about 2½oz. Used to scent soaps.

OLEUM SESAMI. *Gingelli oil. Benne oil.*

Obtained by expression from the seeds of *Sesamum orientale*. It is inodorous, of a bland sweetish taste, and will keep very long without becoming rancid. It bears some resemblance to olive oil in its properties, and may be used for similar purposes. It was known to the ancient Persians and Egyptians, and is highly esteemed by the modern Arabs and other people of the East, both as food, and as an application to promote softness of the skin. It has been sometimes substituted in England for oil of almonds.

OLEUM SINAPIS. *Oil of mustard.*

This oil is expressed from the seeds of the *Sinapis alba* and *nigra*. Those of the white mustard give about 36 per cent., and those of the black about 18 per cent. of their weight of oil. It has an amber colour, is destitute of smell, and is thicker than olive oil. The specific gravity of the oil from the black mustard is 0·9170, and that from white mustard 0·9142 at 59°. It dissolves in 4 times its weight of ether, and in 1000 times its weight of alcohol of 0·833. It makes an excellent soap.

OLEUM SINAPIS VOLATILE. *Volatile oil of mustard.*

May be obtained by submitting to distillation the crushed seeds of *Sinapis alba* or *nigra* with water. It does not exist ready formed in the seeds, but is produced by the action of the water, in the same manner as the volatile oil of almonds. It is pale yellow or colourless; it has a most penetrating odour, and a most acrid burning taste. Its specific gravity at 68° F. is 1·015. It boils at 290° F. It is slightly soluble in water, but readily so in alcohol or ether. It consists of C^{32} H^{20} N^4 O^5 S^5. It is powerfully acrid, rubefacient, and vesicant; and has been proposed as a rubefacient in paralysis, and as a vesicant.

OLEUM SPICÆ. *Oleum spicæ verum. Oleum stechadis. Oil of spike. True oil of spike. Foreign oil of lavender.*

Obtained by distillation with water from *Lavandula spica*. This oil is distinguished from the genuine oil of *Lavandula vera* by its darker-green colour, and its less grateful odour. It is used by painters on porcelain, and by artists, in the preparation of varnishes.

Oil of turpentine coloured with alkanet root is frequently sold under this name.

OLEUM SPIRÆÆ ULMARIÆ. *Oil of meadow-sweet.*

This is a sweet-smelling oil, obtained by distillation from the fresh flowers of common meadow-sweet, *Spiræa ulmaria*. It is remarkable as being identical with the *hydruret of salicyle* or *hydrosalicylic acid*, which may be artificially made in the following way:—Dissolve 1 part of salicine, and 1 part of bichromate of potash, in 10 parts of water; introduce the mixture into a retort, and add $2\frac{1}{2}$ parts of oil of vitriol diluted with 10 parts of water; apply a gentle heat until the effervescence has subsided, then distil with a stronger heat, until a heavy oil, mixed with water, has passed over. It is soluble to a slight extent in water, imparting to it its peculiar smell; soluble in all proportions in spirit and in ether. Sp. gr. 1·173. Boiling point 380°. It possesses the characteristic property of striking a deep violet colour with a salt of peroxide of iron. Its composition is $C^{14} H^5 O^4 + H$.

OLEUM SUCCINI. *Oleum succini rectificatum. Oil of amber.*

For the preparation of this oil, the London College directs amber to be put into an alembic, so that an acid liquor, an oil, and a salt, contaminated with the oil, may distil in a sand-bath, with a heat gradually raised. Afterwards let the oil distil again, and a third time. Volatile oil of amber, when fresh drawn, has a pale yellowish colour, which deepens by age, and a strong and remarkable odour. Scrapings of copal and the resin dammar are frequently substituted for genuine amber in the distillation, and the oil thus obtained is scarcely distinguishable from the genuine. Oil of amber is a powerful local irritant, and is sometimes employed in liniments, in rheumatism, and paralysis. Mixed with olive oil it is applied to the chest in hooping-cough.

OLEUM SULPHURATUM. *Balsamum sulphuris. Sulphurated oil. Balsam of sulphur.*

Is prepared by heating one part of sublimed sulphur in eight parts of olive oil. It is a dark reddish-brown viscid substance, having an extremely unpleasant odour. It is acrid and stimulant, and has been supposed to possess expectorant and diaphoretic properties.

OLEUM TABACÆ VOLATILE. *Nicotianin. Concrete volatile oil of tobacco. Tobacco camphor.*

Obtained by submitting the leaves of *Nicotiana tabacum* with water to distillation. Six pounds of the leaves yielded eleven grains of the oil, which floated on the surface of the liquor. It is solid, has the odour of tobacco, and a bitter taste. It is insoluble in water, but soluble in ether. According to Landerer, it does not exist in fresh tobacco leaves, it would therefore appear to be formed by the action of air and water during drying. It excites in the tongue and throat a sensation similar to that caused by the smoke, and if swallowed causes giddiness, nausea, and sickness; applied to the nose it causes sneezing. This must not be confounded with *nicotine* or *nicotina*, the volatile alkaloid, which is obtained by distilling tobacco with caustic potash.

OLEUM TANACETI. *Volatile oil of tansy.*

Is obtained by distillation from the leaves of *Tanacetum vulgare*. It is yellow, or sometimes green. It has the pe-

culiar odour of the plant, and a warm, bitter taste. Its specific gravity is 0·952.

Oleum templinum. *Krumholz oil.*

Prepared by distillation from Hungarian balsam.

Oleum terebinthinæ. *Spiritus terebinthinæ. Oil of turpentine. Spirits of turpentine.*

Is obtained by submitting to distillation a mixture of American turpentine (which has been melted and strained) and water in due proportions. The distilled product is found to consist of oil of turpentine swimming on water. If no water be employed, a much higher temperature is required to effect the distillation. American turpentine yields about from 14 to 16 per cent., the residue being resin. Pure oil of turpentine is colourless, limpid, and very inflammable, and is neutral to test paper; its specific gravity is 0·86 at 70° F. It boils at 314°, the density of its vapour is 4·76 (Dumas). It is composed of $C^{10} H^8$.

SYNONYMES.

Oleum terebinthinæ æthereum. Lond. Ph. 1746.

Oleum terebinthinæ rectificatum. Lond. Ph. 1788, 1809, 1824.

Oleum theæ. *Oil of tea.*

This oil is much used in China, for burning in lamps, and as an article of food. It is expressed from the seeds of *Camellia Sesanqua*, and *oleifera*, and probably from other species, but there is no evidence of its being ever obtained from the seeds of *Thea*.

Oleum touloucounæ. *Touloucouna oil.*

A thick butyraceous oil obtained from the fruit of the *Carapa toulaucouna*, an inhabitant of Senegal. The oil has a rancid smell, and a bitter, hot, and very disagreeable taste. It excites vomiting, and is used by the natives for anointing the skin, and applying to children's heads to destroy vermin.

Oleum de tribus. *Oil of three ingredients.*

(Van Mons.)

℞ Spirit of turpentine,
Oil of lavender,
Oil of brick . . āā equal parts.
Mix.

Oleum tritici. *Oil of wheat.*

Obtained by pressing bruised wheat between hot iron plates. The Colne wheat yields it most abundantly. It has been recommended as an application in *tinea capitis*.

Oleum e vitellis ovarum. *Oil of yolk of eggs.*

Obtained by boiling eggs hard, heating the yolks, first broken in two or three pieces each, in a frying pan, over the fire, till the oil begins to exude from them, and then pressing them with great force; 50 eggs yield about 5 oz. of oil. Old eggs yield the greatest quantity. It may also be obtained by treating the boiled yolks with ether, and evaporating the ethereal solution.

Oleum e vitis viniferæ lapidibus. *Oil of raisin-stones.*

This oil is extracted from the stones of raisins (the fruit of *Vitis vinifera*). It is of a yellow colour, but darkens by age. It is insipid, and has no smell. It freezes at 2° F. Its specific gravity is 0·9202, at 60°. It is of little use for lighting, but in some localities is used with provisions.

Oleum valerianæ. *Oil of valerian root.*

Obtained by distilling valerian root with water.

Olea volatilia. *Volatile oils.*

Dubl. Ph. 1850.

The soluble or essential oils may be obtained by the following general process.

The substance from which the oil is to be extracted is macerated for 24 hours, with 5 times its weight of water, in a sheet-tin or copper still, and, a condenser being then attached, half the water is drawn over by distillation, on the surface of which the oil will be found to float, unless (which is rarely the case) it should be heavier than water, when it will be found at the bottom of the receiver. The oil having been separated, the aqueous product, which is a saturated solution of the oil in water, is to be returned to the still, and the distillation resumed, and continued until the resulting liquid has the same volume as before. The oil is again separated, the watery product returned to the still, and the distillation resumed; and this process, is to be repeated until it ceases to afford any additional oily product. The oil thus obtained is to be separated as completely as possible from water, and preserved in a well-stopped bottle.

In this way the volatile oils may be obtained from the entire herb of

Mentha piperita,
Mentha pulegium,
Mentha viridis.

From the seeds or fruit of

Carum carui,
Cubeba officinalis,
Eugenia pimenta,
Fœniculum officinale,
Juniperus communis.
Myristica moschata,
Pimpinella anisum.

From the flowers of

Anthemis nobilis,
Lavandula vera.

From the undeveloped dried flowers of

Caryophyllus aromaticus.

From the tops of

Juniperus sabina,
Rosmarinus officinalis.

From the bark of

Cinnamomum zeylanicum.

The water distilled over in the preparation of the several oils should be preserved for medical use.

Edin. Ph. 1841.

Volatile oils are obtained chiefly from the flowers, leaves, fruits, barks, and roots of plants by distilling them with water, in which they have been allowed to macerate for some time. In order to obtain these oils profitably and of good quality, a great variety of conditions must be attended to, differing in regard to each, and such as it would be out of place to enumerate here in detail. Certain general principles, however, may be mentioned.

Flowers, leaves, and fruits, generally yield the finest oils, and in greatest quantity, when they are used fresh. Many, however, answer equally well, if they have been preserved by beating them into a pulp with about twice their weight of muriate of soda, and keeping the mixture in well-closed vessels.

Substances yielding volatile oils must be distilled with water, the proper proportion for which varies for each article, and for the several qualities of each. In all instances the quantity must be such as to prevent any of the material from being empyreumatized before the whole oil is carried over. In operations where the material is of a pulpy consistence, other contrivances must be resorted to for the same purpose.

These chiefly consist of particular modes of applying heat so as to maintain a regulated temperature not much above 212°. On the small scale heat may be thus conveniently applied by means of a bath of a strong solution of muriate of lime, or by means of an oil-bath, kept at a stationary temperature with the aid of a thermometer. On the large scale heat is often applied by means of steam under regulated pressure.

In other operations it is found sufficient to hang the material within the still in a cage or bag of fine net-work; and sometimes the material is not mingled with the water at all, but is subjected to a current of steam passing through it.

The best mode of collecting the oil is by means of the refrigeratory, described in the

Preface; from which the water and oil drop together into a tall, narrow vessel, provided with a lateral tube or lip near the top, and another tube arising from the bottom to about a quarter of an inch below the level of the former. It is evident that with a receiver of this construction the water will escape by the lower tubes; while the volatile oil, as it accumulates, will be discharged by the upper one, except in the very few instances where the oil is heavier than water.

By attending to the general principles now explained, volatile oils may be readily obtained of excellent quality from the flowers of

Anthemis nobilis,
Lavandula vera, and Ruta graveolens.

From the fruit of

Anetheum graveolens, bruised,
Carum carui, bruised,
Eugenia pimento, bruised,
Fœniculum officinale, bruised,
Juniperus communis, bruised,
Piper cubebæ, ground,
Pimpinella anisum, ground.

From the undeveloped dried flowers of

Caryophyllus aromaticus.

From the tops of

Juniperus sabina, and Rosmarinus officinalis.

From the entire herb of

Mentha piperita,
Mentha pulegium,
Mentha viridis, and Origanum marjoram,
And also from the bruised root of Sassafras officinale.

Oleo-saccharum. (See *Elæo saccharum.*)

Opium.

The concrete milky juice of the unripe capsules of the poppy (*Papaver somniferum*). The principal active constituent of opium is *Morphia*, which is in combination with meconic acid, and it is said, sometimes with sulphuric acid.

There are several varieties of opium, of which the following are the principal:—

European opium.

Opium has been made in England, France, and Germany, but these varieties are only occasionally met with in commerce. Some samples of *English opium* have been found to be fully equal to any that is made.

Egyptian opium.

In roundish flattened cakes, about three inches in diameter, covered with fragments of leaves. In its fracture it has a reddish colour, and it does not blacken with keeping. It differs much in quality, and is considered inferior to the Turkey varieties.

Indian opium.

There are three kinds of Indian opium, distinguished as *Benares opium*, *Malwa opium*, and *Patna opium*. *Benares opium* is in balls weighing about 3 or 4 pounds each, thickly coated on the outside with poppy petals agglutinated together. *Malwa opium* is in round or flattened cakes weighing about 10 ounces. Its colour is dark brown. *Patna opium* is either in round or in square cakes. The former are similar to those of Benares opium; the latter is called *Garden Patna opium*; the cakes are about 3 inches square.

Indian opium is inferior to Turkey opium. It is, however, the kind principally used in China.

Persian opium. Trebizond opium.

This variety is not generally met with in commerce. It is in the form of cylindrical sticks, about six inches long, and half an inch in diameter, covered with paper. Its colour and appearance are similar to those of hepatic aloes.

Turkey opium.

There are two varieties of opium brought from Turkey—*Constantinople opium*, and *Smyrna* or *Levant opium*. *Constantinople opium* is considered inferior to the *Smyrna*

variety. It is generally in small, flattened, regular cakes, from 2 to 2½ inches in diameter, and covered with a poppy leaf. It is more mucilaginous than Smyrna opium, and may be distinguished from that by the absence of the rumex capsules, with which Smyrna opium is generally covered. *Smyrna* opium is esteemed the best variety. It is in irregular, rounded, or flattened pieces, varying in weight from 2 pounds downwards. The masses are almost always covered with the reddish capsules of a species of rumex. When first imported the pieces are sort, and, when cut, of a reddish-brown colour; but by keeping, they become hard and nearly black.

Edin. Ph. 1841.

Note.—Opium, concrete juice from the unripe capsules of Papaver somniferum (*L. W. D. C. Spr.*) A solution from 100 grains of fine opium macerated 24 hours in 2 fluidounces of water, filtered, and strongly squeezed in a cloth, if treated with a cold solution of half an ounce of carbonate of soda in 2 waters, yields a precipitate, which weighs when dry, at least 10 grains, and dissolves entirely in solution of oxalic acid.

Orangeade.

A sweet acidulous drink, prepared with oranges, in a similar way to that for making lemonade.

Osteocolla. *Ostiocolla. Osteites. Stelechites. Morochtus. Holosteus. Osteolithus. Lapis sabulosus. Lapis ossifragus. Benbiru. Bone-binder. Bone-binding stone.*

These names have been applied to stalactites of carbonate of lime, found in several parts of Germany, and which were supposed to possess the power of setting broken bones when taken internally, and applied to the part.

Oxymel. *Oxymel.*

Lond. Ph. 1851.

℞ Acetic acid . . . . . fʒvij.
Distilled water . . . . fʒviij.
Honey . . . . . ℔v.

Mix the acid, added to the water, with the honey made hot.

Dubl. Ph. 1850.

℞ Clarified honey, *by weight* . ℔j.
Acetic acid of commerce (sp. gr. 1044) . . . ʒiij.

Mix the acid with the honey previously heated.

Ph. Borussica, 1847. *Oxymel simplex. Oxymel.*

℞ Crude acetic acid (about the strength of distilled vinegar) . . . . . ℔j.
Purified honey . . . . ℔ij.

Mix, and evaporate in a vapour-bath at 167° to 185° Fah., to the consistence of syrup, and strain. Keep it in a cool place.

Note.—It should be clear, of a yellowish-brown colour.

Med. Use.—As the basis of detergent gargles, and of expectorant remedies.

SYNONYMES.

Oxymel simplex.—Lond. Ph. 1824.
Mel acetatum.—Lond. Ph. 1788.

Oxymel colchici. *Oxymel of meadow saffron.*

Dubl. Ph. 1826.

℞ Fresh bulb of meadow saffron, cut into thin slices . . ʒj.
Distilled vinegar . . . . Oj.
Clarified honey, *by weight* . ℔j.

Macerate the meadow saffron with the vinegar in a glass vessel for 2 days; to the liquor, strongly expressed from the root and filtered, add the honey, and then boil down the mixture to the consistence of a syrup, frequently stirring it with a wooden rod.

Med. Use.—Expectorant and diuretic, and used in gout, dropsy, and asthma.

Dose.—ʒj to ʒij.

Oxymel scillæ. *Oxymel of squill.*

Lond. Ph. 1851.

℞ Vinegar of squill . . .	Oiiss.
Honey	℔v.

Evaporate the vinegar by a slow fire to f℥xij, and mix with the honey made hot.

Ph. Borussica, 1847. *Oxymel scilliticum. Oxymel of squill.*

℞ Vinegar of squill. . . .	℔j.
(℥ij squill to ℥xx vinegar)	
Purified honey	℔ij.

Mix, and evaporate in a vapour-bath at 167° to 185° Fah., to the consistence of syrup, and strain. Keep it in a cool place.

Note.—It should be clear, of a yellowish brown colour, and a bitter and acid taste.

Med. Use.—This has been found a useful aperient, detergent, and expectorant, in chronic catarrhs; in large doses it proves emetic.

Dose.—℥j to ℥iij, in combination with some aromatic water.

SYNONYME.

Oxymel scilliticum.—Lond. Ph. 1721, 1746.

Oxysaccharum digitalis. *Oxysaccharum of digitalis.*

Soubeiran's Trait. Pharm. 1847.

℞ Dry digitalis	1 part.
Distilled vinegar . . .	8 parts.
Digest by a gentle heat, strain with expression; add	
Sugar	10 „

Dissolve the sugar, and filter.

This preparation has been extolled by Martius in the treatment of pulmonary phthisis.

Palladium. *Symb.* Pd. *Equiv.* 53·3

A metal, in many of its characters resembling platinum, with which it is found associated. It is not used in medicine. Its principal consumption is by the dentists, who use it in fixing artificial teeth, as a substitute for gold.

Pasta althææ. *Pasta gummi. Pate de guimauve. Pate de gomme. Marshmallow paste. Gum arabic paste.*

No. 1.

℞ Decorticated marshmallow root.	℥iv.
Water.	Oiv.
Best gum arabic . . .	℔iiss.
White sugar	℔iiss.
Orange-flower water . .	℥iv.
Whites of 12 eggs.	

Macerate the root in the water for 12 hours; strain, and add to the clear liquor the gum and sugar, and evaporate to the consistence of honey, then add the albumen beaten up with the orange-flower water; evaporate until it forms a firm paste on being poured on to a marble slab.

No. 2.

℞ Gum arabic,	
White sugar . . .	āā ℔ij.
Water	℥viij.
Orange-flower water . .	℥ij.
Whites of 6 eggs.	

Dissolve the gum and sugar in the water, by the heat of a water-bath. Beat up the albumen with the orange-flower water, add it to the solution, and evaporate the mixture to the proper consistence.

Pasta amygdalarum. *Almond paste.*

As a sweetmeat.

℞ Sweet almonds, blanched,	
White sugar,	
Gum arabic	āā ℔j.
Water	℔iij.
Cherry-laurel water . . .	℥j.
Whites of 6 eggs.	

Beat the almonds into a fine paste with the sugar and some of the water, then add the remainder of the water so as to form an emulsion: add the gum to

the emulsion and dissolve it with heat; evaporate the mixture to the consistence of honey; add the white of egg beaten up with the cherry-laurel water; concentrate it to the proper consistence, then pour it on to a marble slab, and cut it into squares.

As a cosmetic for the hands, &c.

No. 1.

℞ Sweet almonds, blanched	.	℔ss.
Rice powder,		
Orris-root powder . .	āā	ʒiv.
Spermaceti		ʒss.
Oil of almonds		ʒij.
Windsor soap		ʒij.
Oil of bitter almonds . .		ʒj.
Oil of bergamot		ʒiij.
Otto of roses		ʒss.
Rose-water		q. s.

Beat the almonds into a paste with the rice powder, orris powder, and a sufficient quantity of rose-water. Melt the spermaceti, oil of almonds, and soap together, and beat up with the other ingredients so as to form a paste.

No. 2.

℞ Sweet almonds, blanched	.	℔ss.
Bitter almonds, ditto	.	ʒj.
Best honey		ʒij.
Orris-root powder . . .		ʒj.
Rice powder		ʒij.
Eau de Cologne, q. s. to form a paste.		

Pasta dactyliferæ. *Pâte de dattes. Date paste.*

℞ Date fruit, freed from the stones	ʒiij.
Gum arabic	ʒxij.
White sugar	ʒx.
Orange-flower water . . .	ʒj.

Boil the dates in ʒxij of water; strain and press; add the sugar to the liquor, and the white of an egg beaten up; heat it until coagulation takes place, then carefully strain it. Dissolve the gum in a sufficient quantity of water, strain it, mix the 2 solutions together, and evaporate the mixture to the proper consistence.

Pasta glycyrrhizæ. *Pâte de reglisse. Liquorice paste.*

Black liquorice paste.

Codex, Ph. Franç. 1839.

℞ Extract of liquorice, or Italian juice	℔j.
Gum arabic	℔ij.
White sugar	℔j.
Water	℔iv.

Dissolve the liquorice in the water, strain the solution, add the gum and sugar, and evaporate to the proper consistence. It may be flavoured by adding 24 drops of oil of aniseed and ʒj of orris powder.

Brown liquorice paste.

Codex, Ph. Franç. 1839.

℞ Extract of liquorice, or Italian juice . . .	ʒiij.
Gum arabic	ʒxlviij.
White sugar	ʒxxxij.
Extract of opium . . .	gr. xv.
Water	Oiv.

Dissolve the liquorice in the water, strain the solution, add the other ingredients, and evaporate to the proper consistence.

White liquorice paste,

Is made as above, substituting decorticated liquorice root for the extract.

Pasta jujubæ. *Pâte de jujubes. Jujube paste.*

Codex, Ph. Franç. 1839.

℞ Jujube fruit	℔j.
Gum arabic	℔vj.
White sugar	℔v.
Orange-flower water . . .	ʒvj.
Water	q. s.

Boil the jujubes for half an hour in ℔iv. of water, strain, press, and afterwards decant the clear liquor, and clarify it with the whites of 3 or 4 eggs. Dissolve the gum in ℔viij. of water, and strain the solution. Mix the two liquors, add the sugar, evaporate the mixture to a

thick consistence, then add the orange-flower water, and complete the evaporation by the heat of a water-bath, and finally in a stove at 104° Fahr.

Pasta lichenis. *Pâte de lichen. Lichen paste.*

Codex, Ph. Franç. 1839.

℞ Iceland moss	℔j.
Gum arabic	℔v.
White sugar	℔iv.

Heat the moss with a sufficient quantity of water nearly to the boiling point, strain, and reject the liquor; then boil the moss in a fresh portion of water for an hour; strain and press; add the sugar and gum to the decoction, and evaporate it by a gentle heat until reduced to the proper consistence.

Pasta pectoralis. *Pâte pectorale de Baudry. Pectoral paste of Baudry.*

℞ Gum arabic	℔ix.
White sugar	℔viss.
Extract of lettuce . .	ʒij.
Extract of liquorice . .	ʒx. gr. xx.
Balsam of Tolu . . .	ʒx. gr. xx.
Orange-flower water .	℥ivss.
Essence of citron . .	gtt. iv.
Whites of 4 eggs,	
Water	q. s.

Misce secundum artem.

Pasta pectoralis balsamica. *Pâte pectorale balsamique de Regnault. Regnault's pectoral paste.*

℞ Flowers of mallow (*Malva sylvestris* or *glabra*),	
Flowers of cudweed (*Gnaphalium luteo album* or *sylvaticum*),	
Flowers of coltsfoot (*Tussilago farfara*),	
Flowers of red poppy (*Papaver rhœas*). . . .	āā ℥j.

Boil in a quart of water and strain, then add,

Gum arabic	℥xxx.
White sugar.	℥xx.
Tincture of Tolu . . .	ʒij.

Dissolve, strain, and evaporate to the proper consistence.

Pasta tormentillæ. *Paste of tormentilla.*

℞ Powdered tormentilla root	q. p.
White of egg, q. s. to form a paste.	

Applied on linen, for *whitloe*.

Pastilla fumantes. *Fumigating pastilles. Aromatic pastilles.*

No. 1.

(Wirtemb. Ph.)

℞ Benzoin,	
Dry balsam of Peru .	āā 16 parts.
Yellow sandal wood . .	4 „
Labdanum.	1 part.
Charcoal from lime-tree wood	96 parts.
Nitrate of potash . . .	2 „
Mucilage of tragacanth .	q. s.

Mix, and form into conical pastilles.

No. 2.

℞ Charcoal, coarsely powdered	℔j.
Cascarilla bark, powdered .	℥iv.
Benzoin, ditto	ʒij.
Yellow sandal wood . . .	℥ss.
Myrrh	℥j.
Musk.	gr. x.
Oil of cloves	ʒj.
Nitrate of potash . . .	ʒij.
Mucilage of tragacanth . .	q. s.

Mix, and form into pastilles.

No. 3.

℞ Charcoal, in coarse powder .	℔j.
Cascarilla bark	℥iv.
Benzoin,	
Myrrh,	
Camphor,	
Nitrate of potash . .	āā ℥j.
Mucilage of tragacanth . .	q. s.

Mix, and form into pastilles.

No. 4.

℞ Charcoal, in coarse powder . ℔j.
Cascarilla bark . . . . ℥ij.
Yellow sandal wood . . . ℥ss.
Mastic,
Olibanum,
Opoponax,
Storax . . . . . āā ℥j.
Benzoin . . . . . ℥ij.
Mucilage of tragacanth . . q. s.

Mix and form into pastilles.

Paraguay roux.

℞ Leaves and flowers of *Inula bifrons* . . . . . ℥j.
Flowers of *Spilanthes oleracea* . . . . . ℥iv.
Root of pellitory of Spain . ℥j.
Rectified spirit . . . . ℥viij.

Macerate for 14 days, then strain, press, and filter.

Patchouli. *Patchoulie. Puchá pât.*

The dried foliaceous tops of an odoriferous plant, imported from India, and used by the perfumers, principally for making *sachets*. The plant is supposed to belong to the family Labiatæ.

Paullinia. *Guarana.*

A powder prepared from the seeds of *Paullinia sorbilis*, a native of South America. *Guarana* is used in France as a tonic and astringent. It has been found to contain a crystalline substance, resembling, if not identical with *caffein*. A description and analysis of this substance is given in the *Journal de Pharmacie* for 1840, vol. xxvi.

Pemmican.

The round or buttock of beef, of the best quality, from which the fat and membranous parts have been removed, is cut into slices and dried on a malt kiln, heated by a fire of oak wood, until the meat becomes friable. It is then ground in a malt mill, and the powder is mixed with an equal weight of melted beef-suet or lard. It may be rendered more agreeable to the palate by adding some sugar or currants. Having well mixed the ingredients, the mixture is put into tin canisters capable of holding about 85 lbs., and, after being well rammed down, it is allowed to contract on cooling, and the canisters are subsequently filled up with melted lard.

Pepper, soluble cayenne.

No. 1.

Digest ℔j of the best Cayenne pepper with Oj of rectified spirit, at a gentle heat, for 2 days; then put it into a percolating apparatus and displace the tincture. Add the tincture to ℔j of common salt, rub them together in a mortar, add sufficient arnotto to give the mixture the proper colour when dry, and finally dry it in a stove at a temperature about 120°. When dried it should be rubbed through a coarse sieve.

No. 2.

Treat ℔j of Cayenne pepper with spirit, as described above. Mix the alcoholic tincture with an equal volume of a saturated aqueous solution of common salt, in an oil separater, and separate the oil which floats on the surface. Boil the marc, left from the alcoholic tincture, with Oij of water, strain the decoction, and evaporate it to the consistence of syrup; mix this syrupy extract with ℔ij of common salt, dry the mixture over a water-bath, colour it with arnotto, rub it through a coarse sieve to separate the grains, and then intimately mix it with the oil separated from the alcoholic tincture.

The spirit may be recovered, by distillation, from its admixture with the solution of salt.

Pewter.

An alloy of tin and lead; or of tin, with antimony, bismuth, copper, &c.

No. 1.

℞ Tin . . . . . 82 parts.
Lead . . . . . 18 „

If a larger proportion of lead than this is present, the pewter will be acted on by even weak acetic acid.

No. 2.

Trifle.

℞ Tin	. . . . .	83 parts.
Antimony	. . . .	17 „

No. 3.

Plate pewter.

℞ Tin	. . . . .	100 parts.
Antimony	. . . .	8 „
Bismuth	. . . .	2 „
Copper	. . . . .	2 „

No. 4.

Britannia metal, No. 1.

℞ Tin,		
Brass,		
Antimony,		
Bismuth	. . . . .	āā p. æ.

No. 5.

Britannia metal, No. 2.

℞ Tin	. . . . .	82 parts.
Lead	. . . . .	18 „
Antimony	. . . .	5 „
Brass	. . . . .	5 „

This forms an excellent alloy for teapots, &c.

Phloridzine.

A crystalline body obtained from the bark of the roots of apple, pear, or plum trees.

Boil the bark of the roots of the apple, pear, or plum tree, in distilled water, decolourize the decoction with oxide of lead, remove any lead that may remain in solution by sulphuric acid and sulphuret of barium, evaporate the clear liquor to a syrupy consistence, and let it stand that crystals may be formed. These crystals are impure phloridzine, which may be purified by solution, treatment with animal charcoal, and recrystallization.

It has been administered as a febrifuge.

Phosphorus. *Symb.* P. *equiv.* 16 or 31·44.

This is one of the constituents of bones, and from this source it is generally obtained.

Add ℔viij of oil of vitriol, diluted with twice its volume of water, to ℔xij of calcined bones; let the mixture stand for 2 or 3 days, frequently stirring it. Add water to the mixture, and separate the solution from the insoluble sulphate of lime. Evaporate the solution to a syrupy consistence, mix it with ℔j of powdered charcoal, and dry the mixture in an iron vessel over the naked fire. The dry powder is to be put into a stone-ware retort furnished with a wide tube dipping into cold water, and the strong heat of a furnace applied. The phosphorus will distil over, and drop into the water.

Lond. Ph. 1851.

Note.—Phosphorus. Nearly free from colour, translucent like wax, emits light in the dark. Phosphorus should be kept in water and excluded from light.

Amorphous phosphorus.

When phosphorus, confined in an atmosphere incapable of acting chemically upon it, is exposed for 48 hours or more to a temperature of about 450° Fahr., it becomes red and opaque. It is now called *red phosphorus*, or *amorphous phosphorus*. In this altered state it is insoluble in bisulphuret of carbon, and it is much less inflammable than common phosphorus.

Phosphorus paste, for destroying rats, mice, &c.

No. 1.

℞ Phosphorus	. . .	8 parts.
Water lukewarm	. .	180 „
Rye meal,		
Butter or lard	. .	āā 180 „
Sugar	. . . . .	125 „

Liquefy the phosphorus in the lukewarm water, and mix it in a mortar with the rye meal; when cold, add the butter and the sugar, and mix them all thoroughly together. The mixture may be more completely insured if the phosphorus be first reduced to a state of minute division, by liquefying it in warm spirit in a bottle, and shaking the bottle until it has become cold, and then mixing the finely-divided phosphorus with the other ingredients.

No. 2.

℞ Starch . . . . . ℥xij.
Cold water . . . . ℥viij.
Boiling water . . . . Oij.
Phosphorus . . . . ℥iss.

Mix the starch with the cold water, then add the boiling water, and stir them together until a jelly is formed, into which, while still warm, the phosphorus is to be put and left, covered, for a few minutes. The ingredients are then to be well mixed together with a bone spatula, and a little powdered valerian root or anise-seed added.

It is said that rats and mice will eat with avidity this composition, which should be laid for them in small balls.

Cantons phosphorus.

Mix 3 parts of calcined oyster-shells, and 1 part of sulphur; put the mixture into a covered crucible, and heat it strongly for about an hour. This substance becomes phosphorescent in the dark, after being exposed for some time to the sunshine.

Pickle. (*Pikel*, Dutch.)

A liquor in which animal or vegetable substances are preserved. The term is most frequently applied to the fruit or other parts of vegetables preserved in vinegar, or vinegar and salt.

The process of pickling usually consists in depriving the substances to be pickled of their watery juices, where these exist to any extent; in coagulating the albumen, if present; and then covering the substances with some liquid capable of preserving their flavour, and preventing decomposition. The following solutions are used in the process:—

Brine.

No. 1.

℞ Common salt . . . . ℥viij.
Water . . . . . Oij.

Dissolve.

No. 2.

℞ Common salt . . . . ℥xij.
Water . . . . . Oij.

Dissolve.

Pickle.

No. 1.

℞ Strong distilled vinegar . Oij.
Common salt . . . . ℥iss.
Black pepper . . . . ℥ij.
Ginger, whole . . . . ℥iss.
Mace . . . . . ℥j.

Boil for a few minutes and strain.

No. 2.

℞ Strong distilled vinegar . . Oij.
Common salt. . . . . ℥j.

Dissolve.

Pickled barberries.

Put the ripe fruit of the barberry into stone jars, or wide-mouthed green glass bottles, and cover them with *Brine* No. 1, or with *Pickle* No. 2, without applying heat.

Pickled cauliflower or broccoli.

Put the cauliflower or broccoli into a sufficient quantity of *Brine* No. 1, and gradually heat it over the fire until it boils, then pour off the liquor, drain, and dry the vegetables before the fire, put them into a jar, and cover them with *Pickle* No. 1, boiling hot.

Pickled cherries.

Put the cherries, not quite ripe, into stone jars or bottles, and cover them with very strong distilled vinegar, cold.

Pickled eschalots.

Boil a sufficient quantity of *Pickle* No. 1; while boiling, put in the eschalots, and simmer them for 2 minutes; then pour them into a stone jar, and when cold, cover them over.

Pickled gherkins.

Put the gherkins into a jar and pour over them enough of *Brine* No. 1, boiling hot, to cover them; let them stand for a day, then pour off the brine and wipe the gherkins separately; put them again into

the jars, and cover them with *Pickle* No. 1, boiling hot; cover the jar with a plate, and let it stand for 2 days, then heat the liquor again to the boiling point, and pour it over the fruit as before. Let it stand until cold, then cover the jar over.

Sliced cucumbers, *French beans*, and *capsicums*, may be pickled in the same way as *gherkins*.

Pickled limes or lemons.

Take fine sound fruit, and slit them half down in 4 quarters, but not through to the core; put as much salt as they will hold into the incisions, and expose them on a dish, in the sun, for 8 or 10 days, frequently turning them, and basting them with the liquor that runs out. Rub some powdered turmeric on the surface of each; put them, together with the juice that has exuded, and some whole capsicums, into a stone jar, and cover them with *Pickle* No. 1, boiling hot. Let them stand till cold, and then cover them over.

Pickled mushrooms.

Put small *button* mushrooms, recently gathered, into a jar, and pour over them *Pickle* No. 1, in a sufficient quantity to cover them. Let them stand for a day, then reboil the liquor, and again pour it over them.

Pickled nasturtiums.

Put the fruit of the nasturtium, unripe, into jars or bottles, and cover them with *Pickle* No. 2, cold.

Pickled onions.

Select the smallest onions, peel them, and then proceed as directed for eschalots.

Pickled peaches.

Put the peaches, not quite ripe, into *Brine* No. 2; let them remain there for 3 days, then take them out and drain them; put them into a jar, and pour *Pickle* No. 1, boiling hot, over them. After 2 months, they will be fit for use.

Pickled walnuts.

Prick the fruit with a pin or sharp-pointed instrument in several places; put them on a dish, and sprinkle salt over them, expose them to the sun for a week or 10 days, turning them every day, and basting them with the liquor that runs out. Then put them into a jar, together with the liquor, and cover them with *Pickle* No. 1, boiling hot.

Piccalili. Indian pickle.

Take a hard white cabbage, sliced, two cauliflowers pulled to pieces, a stick of horseradish cut in slices, two dozen small onions; cover them with *Brine* No. 1 boiling hot; let them stand for 24 hours, then pour off the liquor, and add an equal quantity of *Pickle* No. 1, boiling hot, together with ℥j of turmeric, and ℥j of mustard in powder; let them stand for 2 days, then mix them with a quantity of pickled cucumbers, gherkins, French beans, and capsicums, and enough *Pickle* No. 1 to cover them.

Pickle for meat.

No. 1.

℞ Bay salt	. . . .	℔iij.
Saltpetre	. . . .	℥ij.
Brown sugar	. . .	℔ij.
Black pepper	. . .	℥ij.
Water	. . . . .	cong. ij.

Boil for 20 minutes.

No. 2.

℞ Common salt	. . .	℔vj.
Bay salt	. . . . .	℔ij.
Saltpetre	. . . . .	℥ij.
Coarse sugar	. . .	℔ij.
Water	. . . . .	cong. iij.

Dissolve with heat.

These pickles are well adapted for preserving tongues, beef, hams, &c., the flavour of which they improve.

Picrotoxine.

The active principle contained in the fruit of *Cocculus Indicus*.

Pilulæ aloes. *Pills of aloes.*

Edin. Ph. 1841.

℞ Socotrine aloes,
Castile soap . . āā equal parts.
Conserve of red roses . q. s.

Beat them into a proper pill-mass. This pill may be also correctly made with the finer qualities of East Indian aloes, as the socotrine variety is very scarce; and many, not without reason, prefer the stronger Barbadoes aloes.

Pilula aloes composita. *Compound pill of aloes.*

Lond. Ph. 1851.

℞ Socotrine aloes, powdered . ℥j.
Extract of gentian. . . . ℥ss.
Oil of caraway . . . . ♏xl.
Treacle, as much as may be sufficient.

Beat together, that they may be intimately mixed into a proper mass for making pills.

Dubl. Ph. 1850. *Pilulæ aloes compositæ.*

℞ Hepatic aloes, in powder . . ℥ij.
Extract of gentian . . . . ℥j.
Oil of caraway . . . . . f℥j.
Treacle, by weight . . . . ℥j.

Beat them together until they are thoroughly incorporated.

Med. Use.—These pills are laxative, and well suited to obviate costiveness.

Dose.—Grs. x. to grs. xv.

SYNONYME.

Pilulæ ex aloë.—Lond. Ph. 1788.

Pilulæ aloes et assafœtidæ. *Pills of aloes and assafœtida.*

Edin. Ph. 1841.

℞ Aloes (Socotrine or East Indian),
Assafœtida,
Castile soap . . āā equal parts.

Beat them with conserve of red roses into a proper pill-mass.

Med. Use.—Purgative and antispasmodic.

Dose.—Gr. x.

Pilulæ aloes et ferri. *Pills of aloes and iron.*

Edin. Ph. 1841.

℞ Sulphate of iron . . . 3 Parts.
Barbadoes aloes . . . 2 „
Aromatic powder . . . 6 „
Conserve of roses . . . 8 „

Pulverise the aloes and sulphate of iron separately, mix the whole ingredients; and beat them into a proper mass; which is to be divided into 5-grain pills.

Pilula aloes cum myrrha. *Pill of aloes with myrrh.*

Lond. Ph. 1851.

℞ Powdered socotrine or hepatic aloes . . . . . ℥ss.
Saffron,
Powdered myrrh,
Soft soap, of each . . . . ℥ij.
Treacle, as much as may be sufficient.

Beat together that a mass may be made.

Dubl. Ph. 1850. *Pilulæ aloës cum myrrha.*

℞ Hepatic aloes, in powder . . ℥ij.
Myrrh, in powder . . . ℥j.
Dried saffron, in powder . . ℥ss.
Treacle, by weight . . . ℥iiss.

Triturate the aloes, myrrh, and saffron together, and sift them; then add the treacle, and beat all the ingredients into a uniform mass.

Edin. Ph. 1841. *Pilulæ aloes et myrrhæ.*

℞ Aloes (Socotrine or East Indian) . . . . 4 parts.
Myrrh . . . . . 2 „
Saffron . . . . . 1 part.

Beat them into a proper mass, with a sufficient quantity of conserve of roses.

Med. Use.—Purgative and emmenagogue.

Dose.—Gr. x. to gr. xx.

SYNONYME.

Pilulæ Rufi. Rufus' pill.

Pilulæ aloes dilutæ. *Diluted aloes pills.*

(Dr. Marshall Hall.)

℞ Barbadoes aloes,
Castile soap,
Extract of liquorice,
Treacle . . . . . āā p. æ.

Dissolve them in water, strain, and evaporate to a proper pilular consistence.

Pilulæ aloes cum mastiche. *Aloes and mastic pills. Lady Hesketh's dinner pills. Lady Crespigny's pills. Lady Webster's pills. Dinner pills.*

No. 1.

℞ Aloes . . . . . ʒvj.
Mastic powdered.
Red roses, powdered, . . āā ʒij.
Syrup of wormwood . . q. s.

Make a pill-mass and divide it into pills of 3 grains each.

Note.—The above is the original recipe; the following will be found a more convenient form:—

No. 2.

℞ Aloes . . . . . ℥vj.
Mastic . . . . . ℥ij.
Soap . . . . . ℥ss.
Water . . . . . fʒss.

Mix together in a heated iron mortar until incorporated, then divide into pills of 3 grains each.

The following substitute for the foregoing is given under the title of,

Pilulæ dictæ antecibum. Dinner pills.

Codex, Ph. Franç. 1839.

℞ Aloes . . . . . ʒvj.
Extract of bark . . . ʒiij.
Powdered cinnamon . . ʒj.
Syrup of wormwood . . q. s.

Mix, to form a pill-mass, to be divided into 4-grain pills.

Dr. Clark's dinner pills.

℞ Socotrine aloes . . . gr. viij.
Extract of chamomile . ʒss.
Powdered myrrh,
Powdered rhubarb, . āā ℈j.
Oil of chamomile . . gtt. viij.
Mucilage q. s. to form into 20 pills.

One or two to be taken daily before dinner.

Note.—These pills, which were originally prescribed by Sir Charles Clarke, are much used in London.

Pilula aloes cum sapone. *Pill of aloes with soap.*

Lond. Ph. 1851.

℞ Powdered extract of Barbadoes aloes,
Soft soap,
Extract of liquorice, equal parts,
Treacle, as much as may be sufficient,

Beat the extract of aloes with the soap; then, the rest having been added, beat all together, that a mass may be made.

Pilulæ aperientes Stahlii. *Stahl's aperient pills.*

Ph. Hannov. Nova, 1831.

℞ Powdered aloes . . . . ʒj.
Compound extract of colocynth . . . . . ℥ss.
Iron filings . . . . . ʒij
Mucilage of gum arabic . . q. s.

Mix, to form pill-mass.

Pilulæ arsenici. *Pilulæ Asiaticæ. Pills of arsenic. Tanjore pills.*

Codex, Ph. Franç. 1839.

℞ Arsenious acid . . . gr. j.
Black pepper powdered . gr. xij.
Gum arabic powdered . gr. ij.
Water . . . . . q. s.

Rub the arsenious acid and the pepper together, in an iron mortar, for some time, until they are thoroughly mixed, then add the gum and water, and make a mass, to be divided into twelve pills.

Note.—It is important to continue the trituration of the pepper with the arsenious acid for a long time, so that the latter may be uniformly distributed through the mass. If the quantity employed be rather large, some hours should at least be occupied in this operation.

Pilulæ assafœtidæ. *Assafœtida pills.*

U. S. Ph. 1851.

℞ Assafœtida . . . . ℥iss.
Soap . . . . . ℥ss.

Beat them with water so as to form a mass, to be divided into 240 pills.

Edin. Ph. 1841.

℞ Assafœtida,
Galbanum,
Myrrh . . . . āā 3 parts.
Conserve of roses . . . 4 „
or q. s.

Mix them, and beat them into a proper pill-mass.

Pilulæ assafœtidæ compositæ. *Compound pills of assafœtida.*

Dubl. Ph. 1851.

℞ Assafœtida . . . . ℥ij.
Galbanum,
Myrrh,
Treacle, by weight, of each ℥j.

Heat all the ingredients in a capsule, by means of a steam or water bath, and stir the mass until it assumes a uniform consistence.

Med. Use.—A good pill in hysterical affections.

Dose.—Grs. x., twice or thrice a-day.

SYNONYME.

Pilulæ assæfœtidæ Co.—Edin. Ph. 1839.

Pilulæ calomelanos et opii. *Pills of calomel and opium.*

Edin. Ph. 1841.

℞ Calomel . . . . . 3 parts.
Opium . . . . . 1 part.
Conserve of red roses, a sufficiency,

Beat them into a proper mass, which is to be divided into pills, each containing 2 grains of calomel.

Med. Use.—An antiphlogistic.

Dose.—1 to 2 pills.

Pilula gambogiæ composita. *Compound pill of gamboge.*

Lond. Ph. 1851.

℞ Powdered gamboge . . ʒij.
Powdered socotrine or hepatic aloes . , . . ʒiij.
Powdered ginger . . . ʒj.
Soft soap . . . . . ℥ss,

Mix the powders together; then, the soap having been added, beat all together, that a mass may be made.

Edin. Ph. 1841. *Pilulæ gambogiæ. Gamboge pills.*

℞ Gamboge,
East Indian or Barbadoes aloes,
Aromatic powder . . āā 1 part.
Castile soap . . . . 2 parts.

Pulverize the gamboge and aloes separately, mix all the powders, add the soap, and then a sufficiency of syrup; beat the whole into a proper pill-mass.

Med. Use.—These pills purge briskly.

Dose.—Ten grains.

Pilulæ cocciæ. (From κοκκια, *pills.*) *Pill cochia.*

In the earliest Pharmacopœias of the London College there were two formulæ for *Pill cochia*, one for *Pilulæ cocciæ majores*, and the other for *Pilulæ cocchiæ*

minores. The former of these is said to have originated with *Razi*, while the latter has been ascribed to *Galen*. Frequent allusion is made to these pills by early medical writers. They are mentioned by *Paulus Ægineta* and *Alexander Trallianus*. Formulæ were given for them by *Mesue* and by *Nicolaus*, in their works, entitled *Antidotarium*, and these were the formulæ first inserted in the London Pharmacopœia. In the year 1773, however, the committee appointed to revise the Pharmacopœia, recommended the rejection of those formulæ, the entire omission of the *Pilulæ coccieæ majores*, and the adoption of a more simple formula than that which had previously been inserted, for *Pilulæ coccieæ minores*. The name of the latter was changed to *Pilulæ ex colocynthide cum aloë*, and the committee stated that the new formula by which these pills were directed to be made, was that published by *Galen*. This formula was inserted in the Pharmacopœia of 1746, as follows :—

No. 1.

Pilulæ ex colocynthide cum aloë. Pilulæ coccieæ. Pill cochia.

Lond. Ph. 1746.

℞ Socotrine aloes,
Scammony . . . . āā ʒij.
Pulp of colocynth . . . ʒj.
Oil of cloves . . . . ʒij.
Syrup of buckthorn . . q. s.

Mix, to form a pill-mass.

This formula has since received a variety of modifications at the hands of different pharmaceutists, among which are the following :—

No. 2.

℞ Cape aloes . . . . . ℔ij.
Pulp of colocynth,
Powdered jalap,
Soap . . . . . āā ℔j.
Oil of cloves . . . . ʒj.
Syrup . . . . . q. s.

Mix, to form a pill-mass.

No. 3.

The same as the above, but substituting socotrine for Cape aloes.

Med. Use.—This is a cheap and favourite purgative pill, much used among the poor.

Dose.—From gr. x. to ʒss.

Pilulæ ex colocynthide simpliciores. *Simple colocynth pills.*

Lond. Ph. 1746.

℞ Colocynth pulp,
Scammony . . . . āā ʒij.
Oil of cloves . . . . ʒij.
Syrup of buckthorn . . q. s.

Mix the colocynth and scammony, previously powdered, with the oil of cloves, and form them into a pill-mass, with the syrup.

SYNONYME.

Pilulæ e duobus.

Edin. Ph. 1841. Pilulæ colocynthidis. *Colocynth pills.*

℞ Socotrine, or East Indian aloes,
Scammony . . . āā 8 parts.
Colocynth . . . . 4 „
Sulphate of potash,
Oil of cloves . . . āā 1 part.
Rectified spirits . . . q. s.

Pulverize the aloes, scammony, and sulphate of potash together; mix them with the colocynth, previously reduced to fine powder; add the oil of cloves; and with the aid of a small quantity of rectified spirit, beat the whole into a proper pill-mass; which is to be divided into 5-grain pills.

Pilula colocynthidis composita. *Compound colocynth pill.* (*Extractum colocynthidis compositum.* Ph. 1836.)

Lond. Ph. 1851.

℞ Extract of colocynth . . ʒj.
Powdered extract of aloes . ʒvj.
Powdered scammony . . ʒij.
Powdered cardamom . . ʒss.
Soft soap . . . . . ʒiss.

Mix the powders together; then, the rest having been added, beat all together, that a mass may be made.

Dubl. Ph. 1850. *Pilulæ colocynthidis compositæ.*

℞ Pulp of colocynth, in fine powder . . . . . ℥j.
Hepatic aloes, in fine powder ℥ij.
Scammony, in fine powder,
Castile soap, of each . . ℥j.
Oil of cloves . . . . fʒj.
Treacle, by weight . . . ʒx.

Reduce the soap to a fine powder, and mix it with the colocynth, aloes, and scammony; then rub all together with the oil of cloves and treacle, and beat them into a mass of a uniform consistence.

PILULÆ COLOCYNTHIDIS ET HYOSCYAMI. *Pills of colocynth and henbane.*

Edin. Ph. 1841.

℞ Colocynth-pill mass . . 2 parts.
Extract of hyoscyamus . 1 part.

Beat them well together, adding a few drops of rectified spirit, if necessary; and divide the mass into 5-grain pills.

Med. Use.—A useful pill in case of irritable bowels.

PILULA CONII COMPOSITA. *Compound pill of hemlock.*

Lond. Ph. 1851.

℞ Extract of hemlock. . . ʒv.
Powdered ipecacuanha . . ʒj.
Treacle, as much as may be sufficient.

Beat together, that a mass may be made.

Med. Use.—Antispasmodic—useful in hooping-cough.

Dose.—Grs. v.

PILULÆ COPAIBÆ. *Pills of copaiba.*

U. S. Ph. 1851.

℞ Copaiba . . . . . ℥ij.
Magnesia, recently prepared ʒj.

Mix them and set the mixture aside till it concretes into a pilular mass, which is to be divided into 200 pills.

Note.—Calcined magnesia or lime, when added in the proportions specified in the foregoing formula to balsam of copaiba, will frequently form a stiff pilular mass. This effect, however, is not produced with all specimens of copaiba, those answering best which are old and contain most resin. Lime produces the effect more completely and uniformly than magnesia, but whichever of these be used, it should be recently calcined, and used while yet warm, and the effect may be still further promoted by exposing the mixture to the heat of a water-bath.

PILULÆ CUPRI AMMONIATI. *Pills of ammoniated copper.*

Edin. Ph. 1841.

℞ Ammoniated copper, in fine powder . . . . 1 part.
Bread-crumb . . . 6 parts.
Solution of carbonate of ammonia . . . . q. s.

Beat them into a proper mass; and divide it into pills, containing each half a grain of ammoniated copper.

Med. Use.—Given in epilepsy and spasmodic disease.

Dose.—1 pill night and morning, to be increased gradually to 4 or 5.

SYNONYME.

Pilulæ cupri ammoniareti. Edin. Ph. 1839.

PILULÆ DIGITALIS ET SCILLÆ. *Pills of foxglove and squill.*

Edin. Ph. 1841.

℞ Digitalis,
Squill . . . . āā 1 part.
Aromatic electuary . . 2 parts.

Beat them into a proper mass with conserve of red roses, and divide the mass into 4-grain pills.

Med. Use.—Diuretic.

Dose.—From 1 to 2 pills.

PILULÆ FERRI CARBONATIS. *Pills of carbonate of iron.*

Edin. Ph. 1841.

℞ Saccharine carbonate of iron . . . . . 4 parts.
Conserve of red roses . 1 part.

Beat them into a proper mass, to be divided into 5-grain pills.

Pilula ferri composita. *Compound pill of iron.*

Lond. Ph. 1851.

℞ Powdered myrrh . . . . ℥ij.
Carbonate of soda,
Sulphate of iron,
Treacle, of each . . . . ℥j.

Rub the myrrh with the carbonate in a vessel previously warmed; then, the sulphate having been added, rub again; then beat all together, that a mass may be made.

Med. Use.—Tonic and emmenagogue.

Dose.—From 10 to 20 grains.

Pilulæ ferri sulphatis. *Pills of sulphate of iron.*

Edin. Ph. 1841.

℞ Dried sulphate of iron . 2 parts.
Extract of taraxacum . 5 „
Conserve of red roses . 2 „
Liquorice-root powder . 3 „

Beat them together into a proper mass, which is to be divided into 5-grain pills.

Med. Use.—Tonic.

Dose.—1 to 2.

Pilula galbani composita. *Compound galbanum pill.*

Lond. Ph. 1851.

℞ Prepared galbanum . . . ℥ij.
Myrrh,
Prepared sagapenum, of each . ℥iij.
Prepared assafœtida . . . ℥j.
Treacle, as much as may be sufficient.

Beat together that a mass may be made.

Med. Use.—Antispasmodic and emmenagogue.

Dose.—Grs. x. to grs. xx.

SYNONYMES.

Pilulæ gummosæ.—Lond. Ph. 1721, 1746.

Pilulæ e gummi.—Lond. Ph. 1788.

Pilulæ myrrhæ compositæ.—Dubl. Ph. 1807.

Pilula hydrargyri. *Pill of mercury.*

Lond. Ph. 1851.

℞ Mercury . . . . . ℥ss.
Confection of French rose . ℥vj.
Powdered liquorice . . . ℥ij.

Rub the mercury with the confection, until globules are not able to be seen any longer; afterwards, the liquorice having been added, beat all together, that a mass may be made.

Edin. Ph. 1841.

℞ Mercury . . . . . 2 parts.
Liquorice root, in powder 1 part.
Conserve of red roses . 3 parts.

Beat the mercury and conserve into a uniform mass till globules of mercury can no longer be detected, then add the liquorice-root, and beat the whole again into a proper mass, which is to be divided into 5-grain pills.

Dubl. Ph. 1850. *Pilulæ hydrargyri.*

℞ Pure mercury . . . . ℥ij.
Confection of roses . . . ℥iij.
Liquorice root, in fine powder ℥j.

Rub the mercury with the confection, until the metallic globules are no longer visible; then add the liquorice powder, and mix the whole well together.

Med. Use.—Alterative and purgative. As an alterative, it is given in doses of from 4 to 6 grains; as a purgative from 10 to 20 grains.

SYNONYMES.

Pilulæ mercuriales.—Lond. Ph. 1746.

Pilulæ ex hydrargyro.—Lond. Ph. 1788.

Blue pill.

Pilula hydrargyri chloridi composita. *Compound pill of chloride of mercury. Plummer's pill.*

Lond. Ph. 1851.

℞ Chloride of mercury,
Oxysulphuret of antimony, of each . . . . . ℥ij.
Powdered guaiacum,
Treacle, of each . . . . ℥ss.

Rub the chloride with the oxysulphuret, then with the guaiacum and treacle, that a mass may be made.

Edin. Ph. 1841. *Pilulæ calomelanos compositæ.*

℞ Calomel,
Golden sulphuret of antimony . . . . āā 1 part.
Guaiac, in fine powder,
Treacle . . . . āā 2 parts.

Mix the solids in fine powder, then the treacle, and beat the whole into a proper pill-mass; to be divided into 6-grain pills.

Dubl. Ph. 1850. *Pilulæ calomelanos compositæ.*

℞ Calomel,
Precipitated sulphuret of antimony, of each . . . . ʒj.
Guaiacum resin, in powder . ʒij.
Castor oil . . . . . ʒj.

Triturate the calomel with the antimony, then add the resin and oil, and beat the whole into a uniform mass.

Med. Use.—Diaphoretic and alterative in syphilitic affections of the skin.

Dose.—From 5 grains to 10 grains.

SYNONYMES.

Pilulæ hydrargyri submuriatis.—Lond. Ph. 1809.

Pilulæ hydrargyri submuriatis compositæ.—Lond. Ph. 1824. Edin. Ph. 1839.

Pilulæ hydrargyri iodidi. *Pills of iodide of mercury.*

Lond. Ph. 1836.

℞ Iodide of mercury . . . ʒj.
Confection of dog-rose . . ʒiij.
Ginger, powdered . . . ʒj.

Beat them together until incorporated.

Med. Use.—These pills have been given in scrofulous affections in the dose of from gr. j. to grs. iij.

Omitted in Lond. Ph. 1851.

Pilulæ hydragogæ Bontii. *Pilules de Bontius. Bontius' pills.*

Codex, Ph. Franç. 1839.

℞ Socotrine aloes . . . . ʒj.
Gamboge . . . . . ʒj.
Gum ammoniacum . . . ʒj.
Vinegar from white wine . . ʒvj.

Dissolve the gum resins and the aloes with heat in half the vinegar; press out the liquor, and to the residue add the remainder of the vinegar, and proceed as before. Then mix the liquors, and evaporate them with the heat of a water-bath until a proper consistence is acquired for making pills, and divide the mass into 4-grain pills.

Pilula ipecacuanhæ cum scilla. *Pill of ipecacuanha with squill.* (*Pilulæ ipecacuanhæ compositæ.* Ph. 1836.)

Lond. Ph. 1851.

℞ Compound powder of ipecacuanha . . . . . ʒiij.
Recently-powdered squill,
Powdered ammoniacum, of each ʒj.
Treacle, as much as may be sufficient.

Beat together, that a mass may be made.

Med. Use.—Diaphoretic and expectorant.

Dose.—Grs. v. thrice a day.

Pilulæ ipecacuanhæ et opii. *Pills of ipecacuanha and opium.*

Edin. Ph. 1841.

℞ Powder of ipecacuan and opium . . . . . 3 parts.
Conserve of red roses . 1 part.

Beat them into a proper mass, which is to be divided into 4-grain pills.

Med. Use.—Diaphoretic.

Dose.—From 10 to 15 grains.

Pilulæ majores Hoffmanni. *Hoffman's pills.*

Ph. Hannov. Nova, 1831.

℞ Corrosive sublimate . . gr. xv.
Distilled water . . . . ʒss.
Crumb of bread . . . q. s.

Form into a pill-mass, and divide into 120 pills.

PILULÆ ODONTALGICÆ. *Pills for the toothache.*

Ph. Borussica, 1847.

℞ Extract of belladonna,
Extract of henbane,
Opium powdered . āā gr. x.
Oil of cloves . . . . gtt. xx.
Pellitory of Spain powdered ʒss.

Or q. s. to make a mass, to be divided into 1-grain pills, and covered with powdered cloves. Keep them in a close vessel.

PILULÆ OPII SIVE THEBAICÆ. *Pills of opium.*

Edin. Ph. 1841.

℞ Opium . . . . . 1 part.
Sulphate of potass . . 3 parts.
Conserve of red roses . 1 part.

Beat them into a proper mass, which is be divided into 5-grain pills.

It is to be observed that this pill contains twice as much opium as the opiate pill of the last Latin edition of this Pharmacopœia.

PILULÆ PECTORALES. *Cough pills.*

(Dr. Latham.)

℞ Compound powder of ipecacuanha . . . . . ʒj.
Fresh squill,
Ammoniacum, gum resin āā ℈j.
Calomel . . . . . grs. iv.

Mix and form into 20 pills. One 3 times a-day.

PILULÆ PLUMBI OPIATÆ. *Opiated lead pills.*

Edin. Ph. 1841.

℞ Acetate of lead . . . 6 parts.
Opium . . . . . 1 part.
Conserve of red roses, about 1 „

Beat them into a proper mass, which is to be divided into 4-grain pills. This pill may be made also with twice the quantity of opium.

Med. Use.—Sedative. 8 grains of this mass contain 1 grain of opium and 6 of acetate of lead.

PILULÆ QUINÆ SULPHATIS. *Pills of sulphate of quinine.*

U. S. Ph. 1851.

℞ Sulphate of quinine . . ʒj.
Gum arabic, in powder . ʒij.
Honey . . . . . q. s.

Mix together the sulphate of quinine and the gum; then beat them with the honey so as to form a mass, to be divided into 480 pills.

PILULÆ RHEI. *Rhubarb pills.*

Edin. Ph. 1841.

℞ Rhubarb, in fine powder . 9 parts.
Acetate of potash . . . 1 part.
Conserve of red roses . . 5 parts.

Beat them into a proper mass, and divide it into 5-grain pills.

Med. Use.—Aperient, and useful in dyspepsia.

Dose.—One or two pills, or even more.

PILULA RHEI COMPOSITA. *Compound rhubarb pill.*

Lond. Ph. 1851.

℞ Powdered rhubarb . . . . ʒiv.
Powdered socotrine aloes. . ʒiij.
Powdered myrrh . . . . ʒij.
Soft soap . . . . . ʒss.
Oil of caraway . . . . . ♏xv.
Treacle, as much as may be sufficient.

Mix the powders together, then, the rest having been added, beat all together, that a mass may be made.

Edin. Ph. 1841. *Pilulæ rhei compositæ.*

℞ Rhubarb in powder . . 12 parts.
Aloes, in fine powder . . 9 „
Myrrh,
Castile soap. . . . . āā 6 „
Oil of peppermint . . . 1 part.
Conserve of red roses . . 5 parts.

Mix them, and beat them into a proper mass, and divide it into 5-grain pills. This pill may be also made without oil of peppermint, when so preferred.

Dubl. Ph. 1850. *Pilulæ rhei compositæ.*

℞ Rhubarb, in fine powder . . ℥iss.
Hepatic aloes, in fine powder . ʒix.
Myrrh, in fine powder,
Castile soap, of each. . . . ʒvj.
Oil of peppermint . . . . f ʒj.
Treacle, by weight . . . . . ℥ij.

Reduce the soap to a fine powder, and triturate it with the rhubarb, aloes, and myrrh; then add the treacle and oil of peppermint, and beat the whole into a uniform mass.

Med Use.—A gentle aperient, in the dose of from 10 to 20 grains.

Pilulæ rhei et carui. *Dr. Kitchener's peristaltic persuaders.*

℞ Powdered rhubarb . . . . ʒij.
Simple syrup . . . . . ʒj.
Oil of caraway . . . . . ♏x.

Mix to form a mass, and divide it into 40 pills.

Med. Use.—These pills were much recommended by the late Dr. Kitchener as a sort of dinner-pill, one or two being taken before the meal.

Pilulæ rhei et ferri. *Pills of rhubarb and iron.*

Edin. Ph. 1841.

℞ Dried sulphate of iron . . 4 parts.
Extract of rhubarb . . . 10 „
Conserve of red roses . . 5 „

Beat them into a proper pill-mass, and divide it into 5-grain pills.

Med. Use.—Tonic and laxative, useful in chlorosis.

Dose.—Grs. x. to xv.

Pilulæ rhei et zingiberis. *Rhubarb and ginger pills.*

No. 1.

℞ Powdered rhubarb . . . . ʒj.
Powdered ginger . . . . . ℈j.
Simple syrup . . . . . q. s.

Mix to form a mass, and divide it into 20 pills.

No. 2.

℞ Powdered rhubarb . . . . ʒiss.
Castile soap . . . . . ℈j.
Essence of ginger. . . . . ʒj.

Mix the soap and essence of ginger together, then add the rhubarb, and when the mixture has acquired a proper pilular consistence from spontaneous evaporation of the spirit, divide into 24 pills.

Pilula sagapeni compositæ. *Compound pills of sagapenum.*

Lond. Ph. 1836.

℞ Sagapenum . . . . . ʒj.
Aloes. . . . . ʒss.
Syrup of ginger . . . . . q. s.

Beat them together until incorporated.

Med. Use.—Antibilious and laxative.

Dose.—Grs. v. to grs. x.

Omitted in Lond. Ph. 1851.

Pilulæ saponis composita. *Compound pill of soap.*

Lond. Ph. 1851.

℞ Powdered opium,
Powdered liquorice, of each. . ʒij.
Soft soap . . . . . ʒvj.

Beat together, that a mass may be made.

Dubl. Ph. 1850. *Pilulæ saponis compositæ.* (*Pilulæ saponis cum opio.*)

℞ Opium, in fine powder . . . ʒss.
Castile soap . . . . . ℥ij.
Distilled water, f ʒss., or as much as is sufficient.

Reduce the soap to a fine powder, add the opium and water, and beat the mixture into a mass of a uniform consistence.

Med. Use.—Narcotic: 5-grains contain 1 grain of opium.

SYNONYMES.

Pilulæ saponacea.—Lond. Ph. 1746.
Pilulæ ex opio.—Lond. Ph. 1788.
Pilulæ opii.—Lond. Ph. 1788, edit. alt.
Pilulæ saponis cum opio.—Lond. Ph. 1809, 1824.

Pilula scillæ compositæ. *Compound pills of squill.*

Lond. Ph. 1851.

℞ Freshly powdered squill	ʒj.
Powdered ginger,	
Powdered ammoniacum, of each	ʒij.
Soft soap	ʒiij.
Treacle	ʒj.

Mix the powders together, then, the rest having been added, beat all together, that a mass may be made.

Dubl. Ph. 1850. *Pilulæ scillæ compositæ.*

℞ Squill, in fine powder	ʒiiss.
Ginger, in fine powder,	
Ammoniac, in fine powder,	
Castile soap, of each.	ʒij.
Treacle, by weight	℥ss.

Reduce the soap to powder, and triturate it with the squill, ginger, and ammoniac; then add the treacle, and beat them all into a mass of a uniform consistence.

Edin. Ph. 1841. *Pilulæ scillæ. Pills of squills.*

℞ Squill, in fine powder	5 parts.
Ammoniac,	
Ginger, in fine powder,	
Spanish soap	āā 4 „
Conserve of red roses	2 „

Mix the powders, add the other articles, beat them into a uniform mass, and divide them into 5-grain pills.

Med. Use.—Expectorant. Diuretic.

Dose.—Grs. v. to grs. xx.

Pilula styracis composita. *Compound pill of storax.*

Lond. Ph. 1851.

℞ Prepared storax	ʒvj.
Powdered opium,	
Saffron, of each	ʒij.

Beat together that a mass may be made.

Edin. Ph. 1841. *Pilulæ styracis. Pills of storax.*

℞ Opium,	
Saffron	āā 1 part.
Extract of storax	2 parts.

Beat them into a uniform mass, which is to be divided into 4-grain pills.

Med. Use.—Sedative.

Dose.—From grs. iv. or grs. v. to grs. viij.

Piperine.

A crystallizable body obtained from black or long pepper, by treating them with alcohol. It is a feeble base, but does form some salts.

It has been used on the Continent as a remedy in intermittents.

Platinum. *Symb.* Pl. *Equiv.* 98·7.

A very dense, white metal, malleable and ductile. It cannot be fused by the heat of a furnace, and is not acted on by any acid but aqua regia. It is oxidized and corroded, however, when heated with caustic alkalies, and readily forms alloys with other metals, which indicates the precautions to be adopted in the use of platinum crucibles. Platinum is always found in the metallic state, but alloyed with other metals.

Platini bichloridum. *Bichloride of platinum.*

This is best formed by dissolving spongy platinum in aqua regia, and gently evaporating the solution to dryness. It is soluble in water and in spirit.

Dose.—From gr. ss. to gr. ij.

Platini et sodii chloridum. *Chloride of platinum and sodium. Platino chloride of sodium.*

℞ Bichloride of platinum.	17 parts.
Chloride of sodium	6 „

Dissolve the two salts in water, mix the solutions, and evaporate that crystals may form.

Dose.—From gr. ss. to gr. ij.

PLUMBUM. *Lead. Symb.* Pb. *Equiv.* 104, or 103·7.

A soft, bluish-grey metal. Sp. gr. 11·38. Melts at 612° Fahr. It is principally obtained from the native sulphuret, or Galena.

PLUMBI ACETAS. *Acetate of lead.*

Lond. Ph. 1836.

℞ Oxide of lead, rubbed to powder . . . . ℔iv. & ℥ij.
Acetic acid,
Distilled water . . āā Oiv.

Mix the acid with the water, and add the oxide of lead to them, and a gentle heat being applied, dissolve it; then strain. Lastly, evaporate the liquor that crystals may be formed.

Note.—Dissolved by distilled water. By carbonate of soda a white precipitate is thrown down from the solution, and by iodide of potassium a yellow one; by hydrosulphuric acid it is blackened. Sulphuric acid evolves acetic vapours. By heat it first fuses, and is afterwards reduced to metallic lead.

There is no formula for its preparation in the Lond. Ph. 1851.

Edin. Ph. 1841.

℞ Pyroligneous acid (D. 1034) . Oij.
Distilled water . . . . . Oj.
Litharge . . . . . ℥xiv.

Mix the acid and water, add the litharge, dissolve it with the aid of a gentle heat, filter, concentrate the solution sufficiently for crystallization on cooling.

Note.—Entirely soluble in distilled water acidulated with acetic acid: 48 grains thus dissolved are not entirely precipitated by a solution of 30 grains of phosphate of soda.

Use.—As an astringent both externally and internally in solution in water, as a collyrium in ophthalmia, an astringent in gonorrhœa. Internally, combined with opium, in pulmonary and intestinal hæmorrhage, in the dose of from gr. ss. to gr. j.

SYNONYMES.

Saccharum saturni.—Lond. Ph. 1721, 1746.

Cerussa acetata.—Lond. Ph. 1788.

Plumbi superacetas.—Lond. Ph. 1809.

Sugar of lead. Goulard powder.

LIQUOR PLUMBI DIACETATIS. *Solution of diacetate of lead.*

Lond. Ph. 1851.

℞ Acetate of lead. . . . ℔ij. & ℥iij.
Oxide of lead, rubbed into powder . . . ℔j. & ℥iv
Distilled water . . . Ovj.

Boil for half an hour, frequently stirring, and, when the solution shall have cooled, add as much as may be sufficient of water that it may fill 6 pints; lastly strain. It should be kept in well-closed vessels.

Note.—Limpid, the specific gravity is 1·260. It corresponds to acetate of lead as regards the other tests above noted, the last being excepted.

Edin. Ph. 1841. *Plumbi diacetatis solutio.*

℞ Acetate of lead. . . . ℥vj. & ʒvj.
Litharge in fine powder . ℥iv.
Water . . . . . Oiss.

Boil the salt and litharge with the water for half an hour, stirring occasionally. When the solution is cold, add water, if necessary, to make a pint and a half; and then filter. Preserve the solution in well-closed bottles.

Note.—This is *Goulard's extract.* A copious precipitate is gradually formed when the breath is propelled through it by means of a tube.

Dubl. Ph. 1850. *Plumbi subacetatis liquor.*

℞ Acetate of lead . . . . . ℥vj.
Litharge, in fine powder . . ℥iv.
Distilled water . . . . . Oij.

Dissolve the acetate of lead in the water, and when the solution is raised to its boiling temperature, add the litharge in successive portions, and boil gently for

half an hour. Add now as much distilled water as will supply what has been lost by evaporation, and filter through paper into a bottle, which should be furnished with an air-tight stopper.

The specific gravity of this solution is 1066.

Use.—Externally used in superficial inflammation of the skin. It also enters into several of the preparations of the Pharmacopœia.

SYNONYMES.

Liquor subacetatis lithargyri.—Dubl. Ph. 1807.

Aqua lithargyri acetati.—Lond. Ph. 1788.

Liquor plumbi acetatis.—Lond. Ph. 1809.

Liquor plumbi subacetatis.—Lond. Ph. 1824.

Goulard's extract of lead.

Liquor plumbi diacetatis dilutus. *Diluted solution of diacetate of lead.*

Lond. Ph. 1851.

℞ Solution of diacetate of lead .	f℥iss.
Distilled water	Oj.
Proof spirit	f℥ij.

Mix.

Dubl. Ph. 1850. *Plumbi subacetatis liquor compositus.*

℞ Solution of subacetate of lead,	
Proof spirit, of each	f℥ij.
Distilled water.	Css.

Mix, filter, and preserve in a well-stopped bottle.

Used in superficial inflammation.

SYNONYMES.

Aqua lithargyri acetati composita.—Lond. Ph. 1788.

Liquor plumbi acetatis dilutus.—Lond. Ph. 1809, 1824.

Liquor subacetatis lithargyri compositus.—Dubl. Ph. 1807.

Liquor plumbi subacetatis dilutus.—Lond. Ph. 1824.

Aqua vegeto-mineralis Goulardi. Goulard water. Water of Saturn.

Plumbi carbonas. *Cerussa. Ceruss. Carbonate of lead. White lead.*

This may be made by precipitation, or by direct combination of carbonic acid and oxygen with metallic lead. The precipitated carbonate is formed by adding an alkaline carbonate to solution of acetate or nitrate of lead, or by passing carbonic acid gas through solution of subacetate or subnitrate of lead. The compounds obtained by these processes, however, are considered inferior, for the purpose of painting, to that formed by exposing sheets of metallic lead in the vapours of acetic acid and carbonic acid. This is the old, and, for practical purposes, still the best process.

Edin. Ph. 1841.

Note.—It does not lose weight at a temperature of 212°. 68 grains are entirely dissolved in 150 minims of acetic acid, diluted with a fluidounce of distilled water; and the solution is not entirely precipitated by a solution of 60 grains of phosphate of soda.

Plumbi chloridum. *Chloride of lead.*

Lond. Ph. 1836.

℞ Acetate of lead	℥xix.
Distilled water, boiling . .	Oiij.
Chloride of sodium. . . .	℥vj.

Dissolve the acetate of lead and chloride of sodium separately, the former in 3 pints of distilled water, and the latter in 1 pint of distilled water. Then the liquors being mixed together, wash what is precipitated with distilled water, when it is cold, and dry it.

Note.—Totally dissolved by boiling water, the chloride concreting almost entirely into crystals as it cools. On the addition of hydrosulphuric acid it becomes black, and by heat yellow.

Omitted in the Lond. Ph. 1851.

Plumbi chromas. *Chromate of lead. Chrome yellow.*

This compound, which is extensively

used as a pigment, is made of several different shades of colour, varying from canary yellow to deep orange. The lightest coloured is made by adding solution of chromate of potash, with which a little alum or sulphuric acid has previously been mixed, to solution of acetate or of nitrate of lead. The deepest coloured is obtained from chromate of potash and diacetate of lead; and the intermediate colours by adding the neutral chromate of potash to acetate of lead, or to a mixture of acetate and diacetate. It has also been observed that the precipitates formed from the same solutions, when mixed at different temperatures, differ in colour.

Plumbi dichromas. *Dichromate of lead. Chrome red.*

This very beautiful pigment, which, when well made, nearly equals vermilion in colour, is prepared in the following manner:—

Put saltpetre into a hessian crucible, and fuse it, in a clear fire, at a bright red heat; then, throw chromate of lead into the fused salt in small quantities at a time, stirring the mixture with a glass-rod, as long as a violent action continues to take place on each addition. At the end of the process, the dichromate will occupy the bottom of the crucible in the form of a black-looking deposit. The chromate of potash, which will form a stratum over the surface of the dichromate, must be immediately poured off: the crucible allowed to cool, and then the dichromate washed with water, and dried.

Much nicety is required in properly regulating the temperature, upon which the result much depends, and this can only be acquired from practice.

Plumbi iodidum. *Iodide of lead.*

Lond. Ph. 1851.

℞ Acetate of lead . . . ℥viij.
Iodide of potassium . . ℥vij.
Distilled water . . . Cj.

Dissolve the acetate in 6 pints of the water, and strain; and add the iodide, previously dissolved in 2 pints of the water, to these. Wash that which is thrown down with cold distilled water, and dry. It should be kept excluded from the access of light.

Note.—Pulverulent, yellow, it is dissolved in boiling water, and falls down from it, when it has cooled in shining yellow scales. It melts by heat, and is dissipated for the most part, first into yellow, and afterwards into violet vapours. If sulphate of soda be added to 100 grains dissolved in nitric acid diluted with twice its quantity of water by a boiling heat, after the iodine has been expelled, 66 grains of sulphate of lead are thrown down. The access of light to this should be prevented.

Edin. Ph. 1841.

℞ Iodide of potassium,
Nitrate of lead . . . āā ℥j.
Water . . . . . Oiss.

Dissolve the salts separately, each in one-half of the water; add the solutions; collect the precipitate on a filter of linen or calico, and wash it with water. Boil the powder in 3 gallons of water acidulated with 3 fluidounces of pyroligneous acid. Let any undissolved matter subside, maintaining the temperature near the boiling point; and pour off the clear liquor, from which the iodide of lead will crystallize on cooling.

Note.—Bright yellow; 5 grains are entirely soluble, with the aid of ebullition, in 1 fluid-drachm of pyroligneous acid, diluted with a fluidounce and a half of distilled water; and golden crystals are abundantly deposited on cooling.

Dubl. Ph. 1850.

℞ Nitrate of lead,
Iodide of potassium, of each . ℥j.
Distilled water . . . . Oij.

Dissolve, with the aid of heat, the nitrate of lead in a pint, and the iodide of potassium in half a pint of the water, and mix the two solutions when cold. Decant the clear so-

lution when the precipitate has subsided, and having transferred the latter to a filter, wash it with the remainder of the water. Finally, dry the product at a temperature not exceeding 212°, and preserve it in a close bottle.

Use.—For the discussion of glandular obstructions.

Dose.—For internal use, gr. ss. to gr. iv.

Plumbi nitras. *Nitrate of lead.*

Edin. Ph. 1841.

℞ Litharge	℥ivss.
Diluted nitric acid . .	Oj.

Dissolve the litharge to saturation, with the aid of a gentle heat. Filter, and set the liquid aside to crystallize. Concentrate the residual liquid to obtain more crystals.

Dubl. Ph. 1850.

℞ Litharge, in fine powder .	℥v.
Pure nitric acid	f℥ij.
Distilled water, ...	Oiij.
Dilute nitric acid, a sufficient quantity.	

To the litharge, placed in a porcelain dish, add the acid with a pint and a half of the water, and, applying a sand heat, and occasionally stirring the mixture, evaporate the whole to dryness. Upon the residue boil the remainder of the water, clear the solution by filtration, and, having acidulated it by the addition of a few drops of the dilute nitric acid, evaporate until a pellicle begins to form on its surface. The heat being now withdrawn, crystals will form, on the cooling of the solution, which should be dried on blotting paper in a warm atmosphere, and preserved in a close bottle,

Use.—Used to form the iodide of lead.

Ledoyen's disinfecting fluid.

This is a solution of one part of nitrate of lead in 8 parts of water.

It has been used to sprinkle in the rooms of the sick, to apply to putrifying sores, and to any decomposing animal or vegetable matter, to prevent the disengagement of noxious gases, by decomposing the sulphuretted hydrogen as it is generated.

Plumbi nitro-saccharas. *Nitro-saccharate of lead.*

(Dr. S. E. Hoskins.)

℞ Sugar	1 part.
Nitric acid	2 parts.
Water	10 ,,

Heat them together in a porcelain dish as long as chemical action continues; then dilute the liquor with water, neutralize it with chalk, and to the filtered solution add acetate of lead as long as a precipitate is formed. Collect, wash, and dry this precipitate, which is saccharate of lead. Dissolve the saccharate of lead in dilute nitric acid (1 part acid to 19 water), filter the solution, and evaporate it until crystals are formed. They are described as being transparent, of an amber colour, and in the form of regular hexagonal plates or prisms.

Med. Use.—As a chemical solvent of phosphatic calculi.

Plumbi oxydum hydratum. *Hydrated oxide of lead.*

Lond. Ph. 1836.

℞ Solution of diacetate of lead	Ovj.
Distilled water . .	conj. iij.
Solution of potash . .	Ovj., or as much as may suffice to precipitate the oxide,

Mix. Wash with water what is precipitated until nothing alkaline remains.

Omitted in Lond. Ph. 1851.

Plumbi oxydum semivitreum. *Semivitrefied oxide of lead. Litharge. Gold litharge.*

Edin. Ph. 1841.

Note.—Protoxide of lead, partially fused; *litharge.*

Fifty grains dissolve entirely, without effervescence, in a fluidounce and a half

of pyroligneous acid; and the solution precipitated by 53 grains of phosphate of soda, remains precipitable by more of the test.

Made by exposing melted lead in a reverberating furnace to a current of air until fully oxidized.

Plumbi oxydum rubrum. *Red lead.*

Made by exposing litharge, heated to between 600° and 700°, to the further oxidizing agency of the air.

SYNONYME.

Minium.

Plumbi tannas. *Tannate of lead.*

Impure tannate of lead has been recommended by Dr. Tott as an application to sloughing sores produced by lying in bed. The following is his formula:—

℞ Oak bark, in coarse powder ℥j.
Water . . . . . ℥viij.

Boil till reduced to ℥iv, then strain, and add solution of acetate of lead as long as any precipitate is formed; collect the precipitate on a filter, wash it and dry it to the consistence of an ointment.

Codex Medic. Hamberg, 1845.

Plumbum Tannicum. Plumbum scytodepsicum. Unguentum plumbi scytodepsici. Tannate of lead.

℞ Oak bark . . . . . ℥ij.
Water . . . . . ℥xvj.
Acetate of lead . . . . q. s.

Boil the bark with the water down to one half, then strain and filter, and add acetate of lead, dissolved in a little water, as long as a liver-coloured precipitate is produced. This precipitate is to be separated, washed with water, and put while still moist into a bottle containing ʒij of rectified spirit; and in this state it is to be dispensed.

Ph. Borussica, 1847.

Cataplasma ad Decubitum. Plumbum Tannicum.

℞ Oak bark, bruised . ℥ij.
Water . . . . q. s. to form 8 ounces of decoction after boiling. To the strained decoction add—
Diacetate of lead . . . . ℥ij.

Mix them together, and separate the precipitate by filtration. Add

Rectified spirit . . . . ʒij.

To be used in the moist state.

Pomatum. (From *pomum*, an apple.)

A fragrant ointment, originally made with apples.

Pomatum pour rafraicher le teint, et ôter les rougeurs du visage.

℞ Suet,
Lard . . . . . āā ℥iv.
Wax . . . . . ℥j.
Rennet apples, cut in pieces No. 2.
Oil of almonds . . . . ℥j.
Essence of lemons . . . ʒij.
Otto of roses . . . . ʒss.

Keep melted by the heat of boiling water for 2 hours, then strain, and pour it into cold water.

Common pomatum.

℞ Lard . . . . . ℔xij.
Suet . . . . . ℔iv.
Essence of lemon . . . ʒviij.

Melt and mix.

Hard pomatum.

℞ Lard,
Suet . . . . . āā ℔j.
Wax . . . . . ℥iv.
Essence of lemon . . ℥j.

Melt and mix.

Roll pomatum.

℞ Suet . . . . . ℔v.
Wax . . . . . ℥viij.
Spermaceti . . . . ℥ij.
Oil of lavender . . . ℥ij.
Oil of bergamot . . . ℥j.

Melt and mix.

East Indian pomatum.

℞ Suet	℔ix.
Lard	℔viij.
Wax	℔j.
Benzoin	℥x.
Essence of lemon . . .	℥vj.
Musk	℈j.

Put the ingredients into a jar, and keep it immersed in boiling water for 2 hours, frequently stirring it; then strain through flannel.

Pommade divine.

No. 1.

℞ Washed and purified beef marrow	℔ij.
Storax,	
Cypress wood,	
Orris root, in powder . .	āā ℥ij.
Cinnamon, in powder . .	℥j.
Cloves,	
Nutmegs, in powder . .	āā ℥ss.

Keep them melted by the heat of boiling water, for 6 hours, then strain through flannel.

No. 2.

℞ Washed and purified beef marrow	℔ij.
Cinnamon,	
Storax,	
Benzoin,	
Orris root,	
Cypress wood . . .	āā ℥iss.
Cloves,	
Nutmegs	āā ℥ss.

Keep them melted by the heat of boiling water for 6 hours, then strain through flannel.

Posset.

Milk curdled with wine or an acid, and sometimes sweetened with treacle. The term is said to have been derived from the Latin word *posca*, applied by Roman writers to a mixture of *vinegar*, *water*, and *eggs*.

Treacle posset.

℞ Milk	Oss.
White wine	℥iss.
Treacle	℥j.

Mix, and heat them in a saucepan until the milk has coagulated.

Potassa. *Potash. Hydrate of potash.*

Edin. Ph. 1841.

Take any convenient quantity of aqua potassæ, evaporate it in a clean and covered iron vessel, increasing gradually the heat, till an oily-looking fluid remains, a drop of which, when removed on a rod, becomes hard on cooling: then pour out the liquid upon a bright iron plate, and as soon as it solidifies break it quickly, and put it into glass bottles secured with glass stoppers.

Note.—Potassa. Protoxide of potassium: potash. Boiling water commonly leaves oxide of iron undissolved, which should not exceed 1·25 per cent.: the solution supersaturated with nitric acid gives a faint precipitate with solution of nitrate of baryta, and more with solution of nitrate of silver,—owing to the presence of impurities.

Lond. Ph. 1851.

Potassæ hydras.

℞ Solution of potash . . cong. j.

Evaporate the water in a clean iron vessel over the fire until the ebullition having ceased, the hydrate of potassa melts: pour this into proper moulds.

Note.—In an open vessel it speedily liquefies. It is totally soluble in alcohol. For its other properties, see Potassæ liquor.

Dubl. Ph. 1850.

Potassa caustica. Caustic potash.

Take of solution of caustic potash, any convenient quantity.

Boil it in a silver or bright iron vessel, until its water has been evaporated away, and then raise the temperature until ebullition ceases, and a liquid is obtained which flows like oil. Pour this out upon a silver or iron dish, and, the moment it has set, break it into fragments, and enclose these in a green glass bottle furnished with an air-tight stopper.

Med. Use.—Merely as a caustic.

SYNONYMES.

Lapis infernalis alkalinus. Lapis infernalis sive septicus.—Lond. Ph. 1721.
Kali purum.—Lond. Ph. 1788.
Potassa fusa.—Edin. Ph. 1809-1824.
Kali causticum.—Dubl. Ph. 1807.
Cauterium potentiale.

POTASSÆ ACETAS. *Acetate of potash.*

Lond. Ph. 1851.

℞ Acetic acid . . . . fʒxxvj.
Carbonate of potash . . ℔j. or as much as may be sufficient.
Distilled water . . . . fʒxij.

Add the carbonate gradually to the acid mixed with the water, to saturation; then strain. Evaporate the liquor in a sand bath, the heat being cautiously applied, until the salt may be dried.

Note.—It is dissolved in rectified spirit and in water. This water tinges neither litmus nor turmeric. Nothing is thrown down from it on either chloride of barium or nitrate of silver being added. But if anything should be thrown down by nitrate of silver from the stronger solution, the same is again dissolved, either dilute nitric acid or water being added. Sulphuric acid added, evolves acetic vapours. 88·8 grains of sulphate of potash remain from 100 grains of this, digested in sulphuric acid, when the solution has been evaporated and the salt dried by a sharp fire.

Edin. Ph. 1841.

℞ Pyroligneous acid . Oiss.
Carbonate of potash (dry) . . . ʒvij. or q. s.

Add the carbonate gradually to the acid till complete neutralization is accomplished. Evaporate the solution over the vapour-bath till it is so concentrated as to form a concrete mass when cold. Allow it to cool and crystallize in a solid cake, which must be broken up and immediately put into well-closed bottles.

Note.—Not subject to adulteration.

Dubl. Ph. 1850.

℞ Pure carbonate of potash . ℔j.
Acetic acid of commerce (sp. gr. 1044) . . . Oij.

To the acid, placed in a porcelain capsule, gradually add the carbonate of potash, and, when effervescence has ceased, boil for a couple of minutes. Add now, if necessary, a few drops of the same acetic acid, so that the solution may have a slightly acid reaction, and having evaporated to dryness, melt the residue, by the cautious application of heat, in a clean pot of cast iron. The liquefied salt is now to be removed from the fire, and when, upon cooling, it has solidified, it should be quickly broken into fragments of a suitable size, and enclosed in a bottle furnished with an air-tight stopper.

Med. Use.—In small doses diuretic, and in larger cathartic. As a diuretic, from ℈j. to ʒj.; as a cathartic, from ʒij. to ʒiij.

SYNONYMES.

Sal diureticus.—Lond. Ph. 1746.
Kali acetatum.—Lond. Ph. 1788.
Acetas kali.—Dubl. Ph. 1807.
Terra foliata tartari.

POTASSÆ ARSENIAS. *Arseniate of potash. Binarseniate of potash, Macquer's arsenical salt.*

℞ Arsenious acid,
Nitrate of potash . . āā p. æ.

Mix them together, and put them into a clean Florence flask; heat the flask over a clear fire until the mixture fuses, and continue the heat as long as red vapours are disengaged. When the flask has cooled, break it, dissolve the salt in boiling distilled water, and put it to crystallize.

POTASSÆ BICARBONAS. *Bicarbonate of potash.*

Lond. Ph. 1836.

℞ Carbonate of potash . . ℔vj.
Distilled water . . . cong. j.

Dissolve the carbonate of potash in the water. Afterwards pass carbonic acid

through the solution to saturation. Apply a gentle heat, so that whatever crystals have been formed may be dissolved. Then set aside [the solution] that crystals may be again produced; the liquor being poured off, dry them.

Carbonic acid is very easily obtained from chalk rubbed to powder and mixed with water to the consistence of a syrup, upon which sulphuric acid is then poured diluted with an equal weight of water.

Note.—Totally dissolved by water, and the solution slightly changes the colour of turmeric. Sulphate of magnesia throws down nothing from this solution unless it be heated. From 100 parts 3·07 are expelled by a red heat. After the addition of excess of nitric acid, chloride of barium throws down nothing, and nitrate of silver very little, if anything.

No formula for this in Lond. Ph. 1851.

Edin. Ph. 1841.

℞ Carbonate of potash . . ℥vj.
Carbonate of ammonia . ℥iijss.

Triturate the carbonate of ammonia to a very fine powder; mix with it the carbonate of potash; triturate them thoroughly together, adding by degrees a very little water, till a smooth and uniform pulp be formed. Dry this at a temperature not exceeding 140°, triturating occasionally towards the close; and continue the desiccation till a fine powder be obtained, entirely free of ammoniacal odour.

Note.—A solution in 40 parts of water does not give a brick-red precipitate with solution of corrosive sublimate; and when supersaturated with nitric acid, is not affected by solution of nitrate of baryta or nitrate of silver.

Dubl. Ph. 1850.

℞ Carbonate of potash, from pearlash . . . . . ℔j.
Distilled water . . . . Oij.
Muriatic acid of commerce . Oiss.
Water . . . . . Oiij.
Chalk in small fragments, or a sufficient quantity. . ℔j.

Dilute the muriatic acid with the water, and having dissolved the carbonate of potash in the distilled water, filter the solution into a three-pint bottle, capable of being tightly closed by a cork traversed by a glass tube, sufficiently long to pass to the bottom of the solution. A second bottle, in the bottom of which a few holes are drilled, and the mouth of which admits of being closed with a cork, also traversed by a glass tube, having been filled with the chalk, and placed in a glass or porcelain jar of the same height with itself, but of somewhat larger diameter, the exterior ends of the two tubes are to be connected air-tight by a tube of vulcanized Indian-rubber. The cork of the bottle containing the carbonate of potash being placed loosely, and that of the other bottle tightly in its place, and the muriatic acid having been poured into the jar in which is lodged the perforated bottle containing the chalk, the liberation of carbonic acid commences, and as soon as it is judged that a sufficient amount of it has been developed to expel completely the air from the apparatus, the cork of the carbonate of potash bottle is to be forced into it quite tight, and the process is to be abandoned to itself for a week. At the end of this time numerous crystals of the bicarbonate of potash will have formed, which are to be removed, shaken in a capsule with twice their bulk of cold water, which is to be rapidly decanted, next drained, and finally dried on bibulous paper by mere exposure to the atmosphere. The mother-liquor, if filtered, and concentrated to one-half, at a temperature not exceeding 110° will yield additional crystals.

The tube immersed in the solution of carbonate of potash will have to be occasionally cleared of the crystals with which it is liable to become plugged, else the process will be suspended.

Use.—When alkali is indicated, this will be found an agreeable and efficient remedy.

Dose.—Gr. x. to. gr. xxx.

SYNONYMES.

Potassæ carbonas.—Lond. Ph. 1809, 1824. Edin. Ph. 1839.

POTASSÆ BISULPHAS. *Bisulphate of potash.*

Edin. Ph. 1841.

℞ Of the residuum in the preparation of pure nitric acid. . . . . ℔ij.
Sulphuric acid (commercial) . . . . fʒvij and fʒj.
Boiling water . . . . Ovj.

Dissolve the salt in the water, add the acid, concentrate the solution, and set it aside to cool and form crystals.

Note.—A solution in 8 waters effervesces briskly with alkaline carbonates.

Dubl. Ph. 1850.

℞ Sulphate of potash, in powder ʒiij.
Pure sulphuric acid . . . fʒj.

Place the acid and salt in a small porcelain capsule, and to this apply a heat capable of liquefying its contents, and which should be continued until acid vapours cease to be given off. The bisulphate which concretes as it cools, should be reduced to a fine powder, and preserved in a well-stopped bottle.

Med. Use.—Purgative, when combined with other purgatives.

Dose.—From gr. x. to ʒj.

SYNONYMES.

Potassæ supersulphas.—Lond. Ph. 1809, 1824.

Sal enixum.

Acid vitriolated tartar.

Sal auri philosophicum.

The name *Sal enixum* is commonly applied to the crude salt resulting from the manufacture of nitric acid.

POTASSÆ BITARTRAS. *Bitartrate of potash. Cream of tartar.*

This salt is obtained by purifying the *Crude tartar*, or *Argol*, (see page 639,) by solution and crystallization. It is a very sparingly soluble salt, requiring nearly 100 parts of cold water, and about 15 parts of boiling water for its solution.

Lond. Ph. 1851.

Note.—It is sparingly dissolved by water. It renders the colour of litmus red. At a red heat it is converted into carbonate of potash.

Edin Ph. 1841.

Note.—Entirely soluble in forty parts of boiling water. 40 grains in solution are neutralized by 30 grains of crystallized carbonate of soda; and when then precipitated by 70 grains of nitrate of lead, the liquid remains precipitable by more of the test.

POTASSÆ BORO TARTRAS. *Borotartrate of potash. Soluble cream of tartar.*

French Codex.

℞ Bitartrate of potash . . 40 parts.
Boracic acid, crystallized 10 „
Water . . . . . 240 „

Dissolve the salt and acid in the water with heat, evaporate the solution either to dryness, or to a syrupy consistence, and spread it on plates to dry in scales.

POTASSII BROMIDUM. *Bromide of potassium,*

Lond. Ph. 1836.

℞ Bromine . . . . . ʒij.
Carbonate of potash . . ʒij & ʒj.
Iron filings . . . . ʒj.
Distilled water . . . Oiij.

First add the iron, and afterwards the bromine, to a pint and half of the distilled water. Set them by for half an hour, frequently stirring them with a spatula. Apply a gentle heat, and when a greenish colour occurs, pour in the carbonate of potash, dissolved in the remainder of the water. Strain, and wash what remains in 2 pints of boiling distilled water, and again strain. Let the mixed liquors be evaporated, so that crystals may be formed.

Note.—Totally dissolved by water. It does not alter the colour of litmus or turmeric. Chloride of barium throws

down nothing from the solution. Sulphuric acid and starch, added together, render it yellow. Subjected to heat it loses no weight. Ten grains of this salt are capable of acting upon 14·28 grains of nitrate of silver, and precipitating a yellowish bromide of silver, which is dissolved by ammonia, and but very little by nitric acid.

Med. Use.—In cases of enlarged spleen.

Dose.—Gr. iij. to gr. x., two or three times a day.

Omitted in Lond. Ph. 1851.

SYNONYME.

Hydrobromate of potash.

Potassa cum calce. *Potash with lime.*

Lond. Ph. 1851.

℞ Hydrate of potash,
Lime, of each . . . . ℥j.

Rub together, and keep in a well-closed vessel.

Note.—Slaked on water being poured on; any acid being added, it evolves no bubbles of carbonic acid.

Edin. P. 1841.

Take any convenient quantity of aqua potassæ; evaporate it in a clean, covered, iron vessel to one-third of its volume; add slaked lime till the fluid has the consistence of firm pulp: preserve the product in carefully-covered vessels.

Dubl. Ph. 1850. *Potassa Caustica cum calce.*

℞ Caustic potash
Fresh burned lime, of each . ℥j.

Rub them both rapidly to powder in a warm mortar, and introduce the mixture with as little delay as possible into a bottle, furnished with an air-tight stopper.

Med. Use.—Merely as a caustic.

SYNONYMES.

Causticum commune fortius.—Lond. Ph. 1746.

Calx cum kali puro.—Lond. Ph. 1788.

Kali causticum cum calce.—Dubl. Ph. 1807.

Potassæ carbonas. *Carbonate of potash. Salt of tartar.*

Lond. Ph. 1836.

℞ Impure carbonate of potash, ℔ij.
Distilled water . . . . Oiss.

Dissolve the impure carbonate of potash in the water, and strain; then pour it into a proper vessel, and evaporate the water, that the liquor may thicken; afterwards stir it constantly with a spatula, until the salt thickens.

Carbonate of potash may be prepared more pure from the crystals of bicarbonate of potash heated to redness.

Lond. Ph. 1851.

Note.—It deliquesces; nearly all is dissolved in water. This solution changes the colour of turmeric into brown. When it has been supersaturated with nitric acid, either carbonate of soda, or chloride of barium, or nitrate of silver, throws down nothing, unless very sparingly. 100 grains of it lose 16 of water by a sharp fire. The same quantity added to diluted sulphuric acid, evolves 26·3 grains of carbonic acid. It should be kept in a well-closed vessel.

No formula in Lond. Ph. 1851.

Edin. Ph. 1841.

Note.—Carbonate of potash not quite pure, obtained by lixiviating, evaporating, and granulating by fusion and refrigeration the potashes of commerce.

One hundred grains lose not more than 20 on exposure to a red heat; and when dissolved and supersaturated by pure diluted nitric acid, the solution gives a faint haze only with solution of nitrate of baryta, and is entirely precipitated by 100 minims of solution of nitrate of silver.

SYNONYMES.

Sal absinthii. Sal tartari.—Lond. Ph. 1746.

Kali præparatum.—Lond. Ph. 1788.

Potassæ subcarbonas.—Lond. Ph. 1809, 1824. Edin. Ph. 1839. Dubl. Ph. 1807.

Mild vegetable alkali. Fixed nitre.

Potassæ carbonas purum. *Pure carbonate of potash.*

Edin. Ph. 1841.

Pure carbonate of potash may be most readily obtained by heating crystallized bicarbonate of potash to redness in a crucible, but more cheaply by dissolving bitartrate of potash in 30 parts of boiling water, separating and washing the crystals which form on cooling, heating these in a loosely-covered crucible to redness, so long as fumes are discharged, breaking down the mass, and roasting it in an open crucible for 2 hours, with occasional stirring, lixiviating the product with distilled water, filtering the solution thus obtained, evaporating the solution to dryness, granulating the salt towards the close by brisk agitation, and heating the granular salt to redness. The product of either process must be kept in well-closed vessels.

Note.—It does not lose weight at a low red heat; and a solution supersaturated with pure nitric acid is precipitated either faintly, or not at all, by solution of nitrate of baryta or nitrate of silver.

Dubl. Ph. 1850. *Potassæ carbonas purum.* (*Potassæ carbonas e Tartari crystallis.*)

℞ White bitartrate of potash . ℔ij.
Sesquicarbonate of ammonia . ʒss.
Distilled water . . . . Oiij.

Place the bitartrate of potash in an iron pot or crucible, and constantly stirring it with an iron rod, expose it to a red heat until vapours cease to be evolved. Reduce the residuum to a coarse powder, and, having boiled it for 20 minutes with 1 quart of the water, filter through paper, washing the filter and its contents with the residual pint of water, in which the sesquicarbonate of ammonia has been first dissolved. The filtered solution is now to be evaporated to dryness, and a low red heat being finally applied, the product is to be rapidly reduced to powder in a warm mortar, and enclosed in well-stopped bottles.

Potassæ carbonas e lixivio cinere. *Carbonate of potash from pearl ashes.*

Dubl. Ph. 1851.

℞ Pearlash . . . . . ℔x.
Distilled water . . . . Oj.

Pour the water on the pearlash, and macerate for a week, occasionally stirring the mixture. Filter through calico, and having evaporated the solution nearly to dryness, reduce the heat, and stir constantly with an iron rod, until granular crystals are obtained. Let these be immediately enclosed in well-stopped bottles.

Potassæ chloras. *Chlorate of potash.*

Mix carbonate of potass with an equivalent quantity of dry hydrate of lime, and expose the mixture to chlorine gas. This mixture, though quite dry, absorbs the gas with great energy, the temperature rises much above 212°, and water is freely evolved. When saturated, it may be moderately heated, which destroys a mere trace of hypochlorite it contains. The whole lime is found to be in the state of carbonate, and the potash as chlorate and chloride of potassium. The solution of these two latter salts is neutral, and free from any bleaching property. The chlorate is then crystallized out in the usual way. (Graham.)

Lond. Ph. 1851.

It is dissolved in water. This solution throws down nothing on nitrate of silver being added. It melts by heat, and evolves nearly 39 grains of oxygen at a red heat, from 100 grains. A few minims of sulphuric acid being dropped upon the crystals, the salt first grows yellow, afterwards it reddens, and exhales yellow vapours of peroxide of chlorine. Rubbed with sulphur it detonates.

SYNONYMES.

Oxymuriate of potash. Hyperoxymuriate of potash.

Potassii cyanidum. *Potassii cyanuretum. Cyanuret of potassium. Cyanide of potassium.*

No. 1.

Donovan's process.

Reduce ferrocyanide of potassium to coarse powder, and introduce it into a forged iron quicksilver bottle, so that the latter shall be about half full. One end of an iron tube, bent twice at right angles, is to be fitted to the plug-hole of the bottle, and the other end of the tube plunged to the depth of about half an inch beneath the surface of some water contained in a cup, so as to prevent the free access of atmospheric air, while the bottle itself is fixed in a furnace and heated gradually up to a bright red heat. The salt is decomposed under the influence of the heat, and gases are given off, which escape through the water into which the end of the tube is plunged. This escape of gas affords an indication of the progress of the decomposition: it should be kept up moderately and uniformly, until, by increasing the heat, no more gas is expelled. The end of the tube is then to be removed from the water and stopped up with a cork or piece of clay, and the bottle allowed slowly to cool. When cold, the iron bottle is to be cut in two with a chisel and heavy hammer. The contents of the bottle will be found to consist of an upper stratum of a white salt, which is the pure cyanide of potassium, and a lower stratum of a black impure cyanide, which is to be rejected. The white salt is to be cut out, and put at once into stoppered bottles.

Note.—This product is pure cyanide of potassium.

No. 2.

Wigger's process.

Introduce into a tubulated receiver a solution of 1 part of pure hydrate of potassa in 3 or 4 parts of highly-rectified spirit. Adapt the beak of a retort to the receiver, so that any gas passing over shall pass through the solution, and fix a safety-tube in the tubulure. Then introduce into the retort 2 parts of ferrocyanide of potassium, in powder, and add to it $1\frac{1}{2}$ part of oil of vitriol, previously diluted with $1\frac{1}{2}$ part of water, and allowed to cool. The receiver must be kept constantly cooled as the gas passes over and is condensed in the solution, and a gentle heat only should be applied to the retort. The solution in the receiver will be transformed into a thick mixture of precipitated cyanide of potassium and the alcoholic solution of the undecomposed potash. The precipitate is to be collected on a filter, freed from the mother-liquor, and washed with alcohol, then pressed and dried on the same filter.

Note.—The product will be pure cyanide of potassium.

No. 3.

Liebig's process.

℞ Ferrocyanide of potassium . 8 parts.
Dried carbonate of potash . 3 „

Dry the ferrocyanide by heating it on an iron plate; mix it with the carbonate of potash, fuse the mixture in an earthen crucible, stirring it occasionally, until gas ceases to be evolved; let it stand for a few minutes that the fused salt may become clear, and then pour this on to a marble slab. When cold, put it into stoppered bottles.

Note.—The salt made by this process will contain a portion of cyanate of potash. It cannot, therefore, be used in medicine as cyanide of potassium.

Potassii ferrocyanidum. *Ferrocyanide of potassium, Prussiate of potash. Ferro-prussiate of potash.*

This salt, which is of great importance in the arts, is prepared in the following manner:—

A mixture of 2 parts of pearlashes, and 4 or 5 parts of animal matter, such as hoofs, horns, &c., cut into small pieces, is projected into an iron pot, previously heated to redness. The mixture is stirred together for some time, and the resulting

mass subsequently removed and allowed to cool. It is then treated with water, which dissolves out the saline matter, from which the ferrocyanide of potassium is deposited on cooling. It is purified by recrystallization.

Lond. Ph. 1851.

Note.—Yellow, it is dissolved in water. This solution is not changed on either any alkali or tincture of galls being added. What is thrown down from it by sulphate of iron, is in the first place white, afterwards it becomes blue. What is thrown down by sulphate of copper is brown, that by sulphate of zinc is white. It loses colour by a gentle heat, and 12·6 grains of water from 100 grains. It is changed by a red fire. That which remains is dissolved in hydrochloric acid, and thrown down again on ammonia being added. 18·7 grains of sesquioxide of iron are procured from 100 grains. Lastly, if the salt be boiled with diluted sulphuric acid, it exhales the odour of hydrocyanic acid.

Potassii iodidum. *Iodide of potassium.*

Lond. Ph. 1851.

Note.—It is dissolved in 6 or 8 parts of rectified spirit; more copiously in water. This water changes the colour of turmeric into brown, either not at all or in a very slight manner only: it does not change the colour of litmus. Nitric acid and starch being added together, it becomes blue; tartaric acid and starch being added, it is not coloured. What is thrown down from the same by acetate of lead, is yellow, and is dissolved in hot water; but nothing falls down, on either solution of lime or chloride of barium being added. Moreover, if that which is thrown down by nitrate of silver be digested in stronger solution of ammonia, and nitric acid be then added to the strained liquor, nothing is thrown down from thence: 141 grains of iodide of silver are thrown down from 100 grains dissolved in water, on nitrate of silver being added.

Edin. Ph. 1841.

℞ Iodine (dry)	℥v.
Fine iron wire . . .	℥ij.
Water	Oiv.
Carbonate of potash (dry)	℥ij & ʒvj.

With the water, iodine, and iron wire prepare the solution of iodide of iron as directed (under the head of *Ferri iodidum*). Add immediately, while it is hot, the carbonate of potash previously dissolved in a few ounces of water, stir carefully, filter the product, and wash the powder on the filter with a little water. Concentrate the liquor at a temperature short of ebullition, till a dry salt be obtained, which is to be purified from a little red oxide of iron and other impurities, by dissolving it in less than its own weight of boiling water, or, still better, by boiling it in twice its weight of rectified spirit, filtering the solution, and setting it aside to crystallize. More crystals will be obtained by concentrating and cooling the residual liquor.

Note.—Its solution is not affected, or is merely rendered hazy, by solution of nitrate of baryta: a solution of 5 grains in a fluidounce of distilled water, precipitated by an excess of solution of nitrate of silver, and then agitated in a bottle, with a little aqua ammoniæ, yields quickly by subsidence a clear supernatant liquid, which is not altered by an excess of nitric acid, or is rendered merely hazy.

Dubl. Ph. 1850.

℞ Pure iodine, reduced to powder	℥ivss.
Filings, or thin turnings of wrought iron, separated from impurities by a magnet	℥ij.
Pure carbonate of potash .	℥iiss.
or a sufficient quantity.	
Distilled water . . .	Oiiiss.

Heat gently 5 ounces of the water with the iron, and 3 ounces of the iodine, for 20 minutes, and then boil until the solution loses its red colour. Filter this through paper, washing the filter with 5 ounces of

water at a boiling temperature, and, in the solution thus obtained, dissolve by digestion and shaking the remainder of the iodine. To the carbonate of potash, dissolved in a quart of the water, and heated to 212° in a large porcelain capsule, add the solution of iron and iodine, and boil until effervescence ceases, adding, if necessary, a little more carbonate of potash, so that the liquor may be very slightly alkaline. Filter now, washing the precipitate with the remaining pint of water boiling hot, and having evaporated the liquid till a pellicle begins to appear on its surface, let it be set by that crystals may form. These, when dried on blotting-paper, should be preserved in a bottle, furnished with a perfectly-tight stopper. The liquor from which the crystals have separated will, by further evaporation and cooling, afford an additional quantity of the salt.

Potassii iodidum. Kalium iodatum. Iodide of potassium.

Ph. Borussica, 1847.

℞ Iodine . . . . . ℥vj.
Iron filings . . . . ℥ij.
Distilled water . . . ℥xxxvj.

Heat them in a porcelain dish to 104° or 122° Fah., and keep them at the same temperature, frequently shaking, until the solution, brown at first, shall have become colourless. Then filter, well wash the iron undissolved, and return the filtered liquor to the same dish, dissolving in it

Iodine . . . . . ℥ij.

Warm the solution, and add gradually,

Pure carbonate of potash dissolved in distilled water . ℥v.

or so much that the oxide of iron may be completely precipitated. Set aside the mixture for an hour, at a temperature of 212° Fah., place it on a filter, well wash it, and to the filtered liquor add hydriodic acid, until it is perfectly neutral. Lastly, crystallize, and preserve it carefully.

The crystals should be cubes and white, neither contaminated with acid nor alkali, and soluble in three-fourths their weight of water, and 6 parts of highly-rectified spirit of wine. The hydriodic acid to be used above may be thus prepared:—

Dissolve ½ an ounce each of iodide of potassium and iodine, in 15 ounces of distilled water, with trituration. Pass sulphuretted hydrogen gas through the solution, until it becomes colourless, frequently shaking; then expose it to a gentle heat, that the gas may be expelled. When cold, filter.

Med. Use.—Antisyphilitic.

Dose.—From gr. v. to gr. x. or more, 2 or 3 times a-day, in the secondary form of syphilis.

SYNONYME.

Ioduret of potassium.

Potassæ nitras. *Nitrate of potash. Saltpetre. Nitre.*

This salt is imported principally from the East Indies, where it forms a natural production. It is purified by crystallization.

Lond. Ph. 1851.

Note.—It is dissolved in water. Nothing is thrown down from this solution either by chloride of barium or nitrate of silver. It melts by heat, but loses nothing of weight: it gives out oxygen by a sharp fire. Sulphuric acid evolves nitrous vapours from the remaining salt rubbed into powder. Placed on glowing charcoal, it deflagrates, carbonate of potash being left. 86 grains of sulphate of potash, dried by a red heat, are procured from 100 grains digested in sulphuric acid.

Edin. Ph. 1841.

Note.—Entirely soluble: its solution is not affected by solution of nitrate of baryta, and faintly, or not at all, by solution of nitrate of silver.

Potassæ nitras fusa. *Fused nitrate of potash. Sal prunella.*

Nitrate of potash fused and cast into moulds.

SYNONYME.

Nitrum tabulatum.

Potassæ nitras depuratum. *Purified nitrate of potash.*

Ph. Hannov. Nova, 1831.

Dissolve crude nitre in twice its weight of water, and add solution of carbonate of potash as long as a precipitate is formed. Filter the liquor, and evaporate it until crystals are formed.

Potassæ nitras purum. *Pure nitrate of potash.*

Dubl. Ph. 1850.

℞ Commercial nitre . . .	℔iv.
Distilled water	Ov,
or a sufficient quantity.	

Having dissolved the nitre in 2 pints of the water, at a boiling temperature, let the heat be withdrawn, and the solution be stirred constantly as it cools, in order that the salt may be obtained in very minute crystals. These, deprived as much as possible of the uncrystallized solution by decantation and draining, are to be washed in a glass or earthenware percolator, with the remainder of the water, or until the liquid, which trickles through, ceases to give a precipitate when dropped into a solution of nitrate of silver. The contents of the percolator should now be extracted, and dried in an oven.

Potassæ quadroxalas. *Quadroxalate of potash. Salt of sorrel.*

Neutralize a given quantity of carbonate of potash with oxalic acid, observing the quantity of acid used, then add 3 times the quantity of acid more. Evaporate the solution so that crystals may be formed.

Potassæ sulphas. *Sulphate of potash.*

Lond. Ph. 1851.

Note.—It is dissolved slightly in water. What is thrown down from this solution by bichloride of platinum is yellowish, and that by chloride of barium is white, and is not dissolved in nitric acid. It crepitates by heat, it melts by a red fire, but loses nothing of weight: 132 grains of sulphate of baryta, dried by a red heat, are procured from 100 grains dissolved in distilled water, chloride of barium and hydrochloric acid being added.

Edin Ph. 1841.

℞ The residuum of the preparation of pure nitric acid	℔ij.
Boiling water . . .	cong. ij.
White marble, in powder	q. s.

Dissolve the salt in the water; add the marble gradually till effervescence ceases, and the solution is completely neutralized; filter the liquid, and evaporate it till a pellicle forms on its surface; then set it aside to cool and form crystals.

Note.—Not subject to adulteration.

Dubl. Ph. 1850.

℞ The residuum of the process for acidum,	
Nitricum purum . . .	℔j.
Fresh-burned lime . . .	℥vj.
Water	Oiv.
Carbonate of potash, from pearlash	℥j.
Diluted sulphuric acid . .	f℥vj.
or as much as is sufficient.	

Slake the lime in 4 ounces of the water, and having dissolved the residuum of the nitric acid process in the remainder of the water, and raised the solution to the temperature of ebullition, gradually add to it the slaked lime, until reddened litmus paper immersed in it is restored to a blue colour. Filter the solution through calico, and to it, raised to the boiling point, add the carbonate of potash, as long as there is any precipitate. Filter again, add the dilute sulphuric acid, so as to produce a neutral or very slightly acid solution, and, having evaporated this until a film forms on the surface, set it by for 24 hours. The crystals which will then have formed should be dried on blotting-paper, and preserved for use.

Use.—Aperient and deobstruent.

Dose.—Gr. x. to ℥ss.

SYNONYMES.

Tartarum vitriolatum.—Lond. Ph. 1721.
Nitrum vitriolatum.—Lond. Ph. 1746.
Kali vitriolatum.—Lond. Ph. 1788.
Specificum purgans paracelsi. Arcanum duplicatum. Sal polychrest. Sal de duobus.

Potassæ sulphas cum sulphure. *Sulphate of potash with sulphur.*

Edin. Ph. 1841.

℞ Nitrate of potash and sulphur . . . . equal parts.

Mix them thoroughly; throw the mixture in small successive portions into a red-hot crucible; and when the deflagration is over, and the salt has cooled, reduce it to powder, and preserve it in well-closed bottles.

Note.—The nature of this preparation is undetermined.

SYNONYME.

Sal polychrestum glaseri. (See p. 921.)

Potassii sulphuretum. *Sulphuret of potassium.*

Lond. Ph. 1836.

℞ Sulphur . . . . . ℥j.
Carbonate of potash . . . ℥iv.

Rub them together, and place them upon the fire in a covered crucible, until they have united.

Note.—Fresh broken, it exhibits a brownish-yellow colour. Dissolved in water, or in almost any acid, it exhales a smell of hydrosulphuric acid. The aqueous solution is of a yellow colour. What is thrown down by acetate of lead is first red, and it afterwards blackens.

There is no formula for this in Lond. Ph. 1851.

Edin. Ph. 1841.

℞ Sulphur . . . . . ℥j.
Carbonate of potash . . . ℥iv.

Triturate them well together, and heat them in a covered crucible till they form a uniform fused mass; which, when cold, is to be broken into fragments, and kept in well-closed vessels.

Note.—A mixture of sulphate of potash with persulphuret of potassium.

Dubl. Ph. 1850. *Hepar sulphuris. (Potassæ sulphuretum.)*

℞ Sublimed sulphur . . . ℥iv.
Carbonate of potash from pearl-ash, first dried, and then reduced to powder . ℥vij.

Mix these ingredients in a warm mortar, and having introduced them into a Hessian crucible, let this be heated, first gradually, until effervescence has ceased, and finally to low redness, so as to produce perfect fusion, and let its liquid contents be then poured into an iron cup, over which a second vessel should be immediately inverted, so as to exclude the air as completely as possible, while solidification is taking place. The solid product thus obtained should, when cold, be broken into fragments, and immediately enclosed in a green-glass bottle, furnished with an air-tight stopper.

Med. Use.—It is chiefly used externally as a lotion, as in treating scabies in infants, and as a local bath in skin diseases.

SYNONYMES.

Hepar sulphuris.—Lond. Ph. 1721.
Kali sulphuratum.—Lond. Ph. 1788.
Potassæ sulphuratum.—Lond. Ph. 1809, 1824.
Liver of sulphur.

Potassæ tartras. *Tartrate of potash. Soluble tartar.*

Lond. Ph. 1851.

Note.—It is dissolved in water. This solution changes the colour of neither litmus, nor turmeric; almost any acid being added, it throws down crystals of bitartrate of potash, which adhere, for the most part, to the vessel. That which is thrown down from the same solution, either by chloride of barium or acetate of lead, is dissolved in diluted nitric acid.

Edin. Ph. 1841.

℞ Bitartrate of potash . ℔iij.
Carbonate of potash . ℥xvj, or q. s.
Boiling water . . Ovj.

Dissolve the carbonate in the water, add the bitartrate till the liquor is neutralized, boil, and filter. Concentrate the liquor till a pellicle forms on its surface, and then set it aside to cool and crystallize. The residual liquor will yield more crystals by further concentration and cooling.

Note.—Entirely and easily soluble in 4 parts of boiling water: solution neutral, and yielding a crystalline precipitate with muriatic acid; 44 grains are not entirely precipitated by 55 of nitrate of lead.

Dubl. Ph. 1850.

℞ Take of carbonate of potash, from pearlash . . . ℥viij.
White bitartrate of potash, in fine powder . . . ℔j.
or a sufficient quantity.
Distilled water . . . Css.

Dissolve the carbonate of potash in the water, and to the solution, while boiling-hot, gradually add the bitartrate, until the liquid, after the ebullition has been continued for a couple of minutes, ceases to change the colour of blue or reddened litmus. Filter through calico, and having evaporated the clear liquor until a pellicle forms on its surface, set it by to crystallize. After 12 hours, pour off the liquid, and, having dried the crystals on bibulous paper, preserve them in a well-stopped bottle.

Med. Use.—A mild purgative; it is chiefly used for correcting the griping properties of resinous purgatives.

Dose.—℥j to ℥j.

SYNONYMES.

Tartarum solubili.—Lond. Ph. 1746.
Kali tartarisatum.—Lond. Ph. 1788.
Tartarised tartar. Vegetable salt.

Pot pourri.

A mixture of odorous flowers, roots, gums, &c., either mixed together dry, or preserved with salt. The usual way of making it is to collect roses, lavender, and other sweet-scented flowers, as they blow; to put them into a large jar mixed with salt, until a sufficient quantity has been collected; then to add to these such other odorous substances as may be required to form an agreeable perfume. Among the substances thus added are, Acorus calamus root, Calamine storax, Benzoin, Yellow sandal-wood, Cinnamon, Cloves, Cassia buds, Orange flowers, Orris-root, Musk, and if requisite, some essential oils.

Instead of the fresh flowers, dried roses are sometimes used, and with the addition of some essential oils, these answer quite as well.

Potus imperialis. *Imperial drink.*

℞ Cream of tartar . . . ℥ss.
A lemon cut in slices,
White sugar . . . . ℔ss.
Spring water . . . . Oiij.

Mix together, and let them stand for half an hour.

Pounce.

Powdered sandarach resin, which is used for putting over fresh writing to give it a glistening appearance.

Prepared cochineal.

℞ Cochineal,
Salt of tartar,
Cream of tartar,
Alum . . . . . aā ℥j.
Distilled water . . . ℥viij.

Boil the cochineal and salt of tartar in the water, then add the cream of tartar and alum, and strain.

Ammoniacum præparatum. *Prepared ammoniacum.*

Lond. Ph. 1851.

℞ Clotted ammoniacum . ℔j.
Water, as much as may be sufficient to cover the ammoniacum.

Boil the ammoniacum with the water until they may be mixed. Strain the mixture through a hair-sieve, and evaporate in a water-bath, so far that it may harden when it shall have cooled.

ASSAFŒTIDA PRÆPARATA. *Prepared assafœtida.*

Lond. Ph. 1851.

Prepare this in the same manner as is directed concerning prepared ammoniacum.

CASSIA PRÆPARATA. *Prepared cassia.*

Lond. Ph. 1851.

℞ Cassia, broken lengthwise ℔j.
Distilled water, as much as may be sufficient to cover the cassia.

Macerate for 6 hours, frequently stirring; strain the pulp washed out through a hair-sieve, and evaporate in a water-bath to the consistence of a confection.

GALBANUM PRÆPARATUM. *Prepared galbanum.*

Lond. Ph. 1851.

Prepare this in the same manner as is directed concerning prepared ammoniacum.

PIX BURGUNDICA PRÆPARATA. *Prepared Burgundy pitch.*

Lond. Ph. 1851.

Prepare this in the same manner as is directed concerning prepared ammoniacum.

PRUNUM PRÆPARATUM. *Prepared prune.*

Lond. Ph. 1851.

℞ Prune,
Water, as much as may be sufficient to cover the prune.

Boil gently for 4 hours. Press out the softened pulp first through a sieve constructed of cane, afterwards through a fine hair-sieve. Lastly, evaporate, in a water-bath, to the consistence of a confection.

SAGAPENUM PRÆPARATUM. *Prepared sagapenum.*

Lond. Ph. 1851.

Prepare this in the same manner as is directed concerning prepared ammoniacum.

STYRAX PRÆPARATA. *Prepared styrax.*

Lond. Ph. 1851.

℞ Styrax . . . . . ℔j.
Rectified spirit . . . Oiv.

Boil, and strain through a cloth; then let the greater part of the spirit distil at a gentle heat. Evaporate that which is left, in a water-bath, to a proper consistence.

TAMARINDUS PRÆPARATUS. *Prepared tamarinds.*

Lond. Ph. 1851.

℞ Tamarind . . . . . ℔j.
Water, as much as may be sufficient to cover the tamarind.

Macerate for 4 hours with a gentle heat, and finish in the same manner as is directed concerning prepared prune.

THUS PRÆPARATUM. *Prepared frankincense.*

Lond. Ph. 1851.

℞ Frankincense . . . . ℔j.
Water, as much as may be sufficient to cover the frankincense.

Boil the frankincense in the water until it may melt, and strain through a hair-sieve; then, when it shall have cooled, the water having been poured off, keep the frankincense for use.

PROTEINE.

Dissolve coagulated albumen (white of egg) in moderately-strong solution of caustic alkali, digest the mixture for several days in an open vessel, at a temperature about 140°, filter the solution, and add acetic acid in slight excess. The

flocculent precipitate which will be formed is to be collected on a filter, washed and dried.

Pulvis agaricus. *Mushroom powder.*

The mushrooms are gradually dried until reduced to a fit state for powdering, and a little white pepper, cloves, and mace, are mixed with the powder.

Pulvis albuminis. *Poudre clarifiante. Powder for clarifying wines.*

Beat together the whites and yolks of eggs, dry them with a gentle heat, and then reduce the dry mass to powder.

This powder is said to be exported from France to the French Sugar Islands for clarifying the cane juice.

The serum of blood is also dried, and sold in powder or transparent scales under the name of "dried albumen."

Pulvis aluminis compositus. *Compound powder of alum.*

Edin. Ph. 1841.

℞ Alum . . . . . ʒiv.
Kino . . . . . ʒj.

Mix them, and reduce them to fine powder.

Med. Use.—Astringent.

Dose.—Gr. x. to gr. xv.

Pulvis aloes compositus. *Compound powder of aloes.*

Lond. Ph. 1851.

℞ Socotrine, or hepatic aloes . ʒiss.
Guaicum . . . . . ʒj.
Compound powder of cinnamon . . . . . ʒss.

Rub the aloes and guaiacum separately into powder; then mix with the compound powder of cinnamon.

Med Use.—Cathartic and sudorific.

Dose.—From gr. x. to gr. xx

SYNONYMES.

Pulvis aloëticus cum guaiaco.—Lond. Ph. 1788.

Pulvis aloës cum guaiaco.—Lond. Ph. 1788, ed. alt. Dubl. Ph. 1807.

Pulvis aluminis cum capsico. *Alum and capsicum powder.*

(Dr. Turnbull.)

℞ Alum . . . . . 3 parts.
Concentrated tincture of capsicums . . . . . 1 part.

Mix, and dry the powder.

Pulvis antilyssus.

Lond. Ph. 1746.

℞ Ash-coloured ground liverwort (*Peltidea canina*) . . . . ʒij.
Black pepper . . . . . ʒj.

Reduce them to powder and mix them.

Med. Use.—This was formerly employed as a remedy for hydrophobia, as its name indicates, being derived from *lyssa*, (λύσσα, canine madness.) See *Peltidea canina*.

Pulvis pro argento. *Plate powder.*

Prepared chalk, polisher's putty, powder, or a mixture of these, forms the best plate powder. The compositions, frequently sold, which contain mercury, are very injurious to the plate.

Plate boiling powder.

℞ Cream of tartar,
Common salt,
Alum . . . . . āā p. æ.

A small quantity of this powder added to the water in which the plate is boiled gives it a silvery whiteness.

Silvering powder.

℞ Silver, powdered . . . . gr. xx.
Alum . . . . . gr. xxx.
Cream of tartar,
Common salt . . . . āā ʒij.

Mix. This powder formed into a paste with water, and rubbed over the surface of clean copper, gives it a coating of silver.

Pulvis aromaticus. *Aromatic powder.*

Edin. Ph. 1841.

℞ Cinnamon,
Cardamom seeds and ginger, of each equal parts.

Mix them, and reduce to a very fine powder, which is to be kept in well-closed glass vessels.

Dubl. Ph. 1850.

℞ Cinnamon,
Ginger, of each . . . . . ʒij.
Cardamom seeds, freed from their capsules,
Nutmeg, of each . . . . . ʒj.

Rub each separately to powder, and having mixed them by trituration, pass through a fine sieve. When prepared, the powder should be kept in well-stopped bottles.

Ph. Borussica, 1847.

℞ Cassia, powdered . . . . . ʒij.
Lesser cardamoms, powdered . ʒj.
Ginger, powdered . . . . . ʒss.

Mix, and keep in a well-stopped vessel.

Pulvis asarabaccæ compositus. *Compound powder of asarabacca. Cephalic snuff.*

Dubl. Ph. 1826.

℞ Leaves of asarabacca, dried . . ʒj.
Lavender flowers, dried . . . ʒj.

Reduce them together to powder.

Med. Use.—Errhine.

Five to six grains snuffed up the nostrils.

Omitted in Dubl. Ph. 1850.

Pulvis basilicus. *Basilic powder.*

The powder bearing this name appears to have been in use from an early date. The term *basilicus* is derived from the Greek Βασιλικος, royal; the name, therefore, signifies *royal powder*, which was applied by the ancients to several compounds, from their supposed pre-eminence.

The formula generally adopted in this country is that given in the Pharmacopœia Bateana, and also in Quincy's Dispensatory, which is as follows:—

Pulvis basilicus.

℞ Scammony,
Calomel,
Washed calx of antimony (Diaphoretic antimony)
Cream of tartar . . . . āā p. æ.

Mix.

This form appears to have originated with a medical writer of the name of Cornacchini; and we find the same powder, somewhat modified in composition, ordered in some of the Continental Pharmacopœias under Cornacchini's name. Thus we have,

Pulvis Cornacchini reformatus.

Ph. Lusitanica, 1822.

℞ Scammony,
Cream of tartar . . . . āā ʒij.

Mix, to form a powder.

Pulvis Cornacchini. Polvos Cornaquinos.

Farmacopea en Castellano, 1823.

℞ Scammony,
Diaphoretic antimony,
Cream of tartar . . . . āā p. æ.

Mix.

A formula was given for it in the London Pharmacopœia of 1721, under the title of

Pulvis comitis Warwicensis. Earl of Warwick's powder.

Lond. Ph. 1721.

℞ Scammony, prepared with the fumes of sulphur . . . . ʒij.
Diaphoretic antimony . . . ʒj.
Cream of tartar . . . . . ʒss.

Mix.

In the Pharmacopœia of 1746 this was changed to

Pulvis e scammonio compositus.

Lond. Ph. 1746.

℞ Scammony. . . . . ℥iv.
Burnt hartshorn. . . . . ℥iij.

Mix.

Med. Use.—A favourite remedy, as an alterative and aperient, for children; given in doses of from 3 to 6 grains.

Pulvis catechu compositus. *Compound powder of catechu.*

Dubl. Ph. 1850.

℞ Catechu,
Kino, of each . . . . . ℥ij.
Cinnamon,
Nutmeg, of each . . . . . ℥ss.

Reduce each to powder, mix, and pass through a fine sieve. When prepared, the powder should be kept in well-stopped bottles.

Pulvis e cerussa compositus. *Compound powder of ceruss.*

Lond. Ph. 1746.

℞ Ceruss powder . . . . . ℥v.
Sarcocolla powder . . . . ℥iss.
Tragacanth powder . . . . ℥ss.

Reduce them to powder, and mix them.

Pulvis cinnamomi compositus. *Compound powder of cinnamon.*

Lond. Ph. 1851.

℞ Cinnamon. . . . . ℥ij.
Cardamom . . . . . ℥iss.
Ginger. . . . . ℥j.
Long pepper . . . . . ℥ss.

Rub them together, so that a very fine powder may be made.

See *Pulvis aromaticus.*

Med. Use.—Carminative; a useful adjunct to other preparations.

Dose.—Gr. v. to gr. xx.

SYNONYMES.

Species diambræ sine odoratis.—Lond. Ph. 1721.

Species aromaticæ.—Lond. Ph. 1746.

Pulvis aromaticus.—Lond. Ph. 1788.

Pulvis clupeæ. *Anchovy powder.*

The fish, previously separated from the bones, is pounded, rubbed through a sieve, mixed with flour, gradually dried in a stove, or before the fire, and then powdered.

Pulvis contrayervæ compositus. *Compound powder of contrayerva.*

Lond. Ph. 1824.

℞ Contrayerva root, powdered . ℥v.
Prepared oyster shells . . . ℔iss.

Mix.

Pulvis cornu cervini usti. *Powder of burnt hartshorn.*

Dubl. Ph. 1826.

Let pieces of hartshorn be burnt, until they become white; then reduce them to a very fine powder.

Med. Use.—In rachitis.

Dose.—Gr. x. to gr. xxx.

Omitted in Dubl. Ph. 1850.

Pulvis cornu usti cum opio. *Powder of calcined hartshorn with opium.*

Lond. Ph. 1824.

℞ Hard opium, in powder . . . ℥j.
Prepared calcined hartshorn . . ℥j.
Cochineal, in powder . . . . ℥j.

Mix.

Note.—Ten grains contain one grain of powdered opium.

Pulvis cosmeticus. *Cosmetic powder.*

Ph. Hannov. Nova, 1831.

℞ Sweet almonds, blanched,
Powdered beans. . . . āā ℥xviij.
Orris powder . . . . . ℥viij.
Spermaceti . . . . . ℥iss.
Dried carbonate of soda . . ℥j.
Spanish soap . . . . . ℥vj.
Oil of lavender,
Oil of bergamot,
Oil of lemon . . . . āā ʒvj.

Mix.

Pulvis cretæ compositus. *Compound powder of chalk.*

Lond. Ph. 1851.

℞ Prepared chalk	℔ss.
Cinnamon	ʒiv.
Tormentil,	
Acacia	āā ʒiij.
Long pepper	ʒss.

Rub them separately to very fine powder; then mix them.

Edin. Ph. 1841.

℞ Prepared chalk	ʒiv.
Cinnamon, in fine powder. .	ʒiss.
Nutmeg, in fine powder . .	ʒj.

Triturate them well together.

Dubl. Ph. 1850.

℞ Prepared chalk	ʒv.
Cinnamon.	ʒiiss.
Gum arabic	ʒij.
Nutmeg	ʒss.

Rub the ingredients separately to powder, then mix, and pass through a fine sieve.

Med. Use.—Antacid and astringent.

Dose.—From gr. v. to gr. xxx.

SYNONYMES.

Pulvis e bolo compositus sini opio. Species e scordio sini opio.—Lond. Ph. 1746.

Pulvis carbonatis calcis compositus.—Edin. Ph. 1839.

Pulvis cretæ compositus cum opio. *Compound powder of chalk with opium.*

Lond. Ph. 1851.

℞ Compound powder of chalk .	ʒviss.
Hard opium, powdered . .	℈iv.

Mix them.

Edin. Ph. 1841. *Pulvis cretæ opiatus.*

℞ Compound chalk powder. .	ʒvj.
Powder of opium. . . .	℈iv.

Triturate them together thoroughly.

Dubl. Ph. 1850. *Pulvis cretæ opiatus. (Pulvis cretæ compositus cum opio.)*

℞ Compound powder of chalk	ʒiv. & ʒvij.
Opium, in fine powder .	ʒj.

Mix them intimately, and pass through a fine sieve.

Med. Use.—Antacid and sedative.

Dose.—From gr. xx. to gr. xl.

SYNONYMES.

Pulvis e bolo compositus cum opio. Species e scordio cum opio.—Lond. Ph. 1746.

Pulvis opiatus.—Edin. Ph. 1839.

Pulvis pro crine. *Hair powder. Nursery powder.*

Plain hair powder is merely starch, powdered and sifted through a fine sieve. *Violet hair powder* generally contains a little orris powder, and it may also be scented with essence of violets. Essential oils, musk, &c., are occasionally added to vary the character of the powder, according to fancy.

Pulveres effervescentes. *Effervescing powders. Sodaic powders.*

Edin. Ph. 1841.

℞ Tartaric acid . . .	ʒj.
Bicarbonate of soda .	ʒj. & 54 grs.;
Or	
Bicarbonate of potash	ʒj. & 160 grs.

Reduce the acid and either bicarbonate separately to fine powder, and divide each into 16 powders; preserve the acid and alkaline powders in separate papers of different colours.

Dubl. Ph. 1850. *Pulveres effervescentes tartarizati.*

℞ Crystals of tartaric acid . .	ʒx.
Bicarbonate of soda . . .	ʒxi.;
Or,	
Bicarbonate of potash . .	ʒxiij.

Reduce the acid and alkaline bicarbonates, separately, to a fine powder, and divide each into 18 parts. The acid and alkaline powders should be kept in papers of different colours.

PULVERES EFFERVESCENTES APERIENTES. *Seidlitz powders.*

(*Blue paper.*)

℞ Potassio-tartrate of soda . . ʒij.
Bicarbonate of soda . . . ℈ij.
Mix.

(*White paper.*)

℞ Tartaric acid . . . . . ʒss.

PULVERES EFFERVESCENTES CUM ABIETE. *Spruce beer powders.*

(*Blue paper.*)

℞ White sugar . . . . ʒiij.
Bicarbonate of soda . . grs. xxvj.
Essence of spruce . . . gtt. v.
Mix.

(*White paper.*)

℞ Tartaric acid . . . . . ʒss.

PULVERES EFFERVESCENTES CITRATI. *Citrated effervescing powders.*

Dubl. Ph. 1850.

℞ Crystals of citric acid. . . ʒix.
Bicarbonate of soda . . . ʒxi.;
Or,
Bicarbonate of potash. . . ʒxiij.

Reduce the acid and alkaline bicarbonates, separately, to a fine powder, and divide each into 18 parts. The acid and alkaline powders should be kept in papers of different colours.

PULVERES EFFERVESCENTES CUM ZINGIBERE. *Ginger beer powders.*

(*Blue paper.*)

℞ White sugar . . . . ʒij.
Bicarbonate of soda . . grs. xxvj.
Powdered ginger. . . grs. v.
Essence of lemon. . . gtt. j.
Mix.

(*White paper.*)

℞ Tartaric acid . . . . . ʒss.

PULVIS FUMALIS. *Fumigating powder.*

Ph. Bat. 1805.

℞ Benzoin,
Amber,
Mastic,
Olibanum . . . . . āā ʒvj.
Cascarilla . . . . . ℥ss.

Reduce them separately to coarse powder, and mix them.

Russ. Ph.

℞ Mastic,
Olibanum,
Amber . . . . . āā 3 parts.
Storax . . . . . 2 „
Benzoin,
Labdanum . . . . āā 1 part.

Mix in coarse powder.

PULVIS GLYCYRRHIZÆ COMPOSITUS. *Pulvis pectoralis kurellæ. Compound liquorice powder.*

Ph. Borussica, 1847.

℞ Senna leaves, powdered,
Liquorice root, powdered āā ℥vj.
Fennel seeds, powdered,
Pure sulphur . . . āā ℥iij.
Refined sugar, powdered . ℥xviij.
Mix.

PULVIS GUMMOSUS. *Gum powder.*

Ph. Borussica, 1847.

℞ Gum arabic, powdered . . . ℥iij.
Liquorice root, powdered . . ℥j.
Refined sugar, powdered . . ℥ij.
Mix.

PULVIS IPECACUANHÆ COMPOSITUS. *Compound powder of ipecacuanha.*

Lond. Ph. 1851.

℞ Ipecacuanha, powdered,
Opium, powdered . . . āā ʒj.
Sulphate of potash, powdered. ℥j.
Mix them.

Edin. Ph. 1841.

℞ Ipecacuanha, in powder,
Powder of opium . . . āā ʒj.
Sulphate of potass. . . . ʒviij.
Triturate them together thoroughly.

Dubl. Ph. 1850.

℞ Ipecacuan, in fine powder,
Opium, in fine powder, of each ʒj.
Sulphate of potash. . . . ℥j.
Mix them thoroughly by trituration, and pass the powder through a fine sieve.

Med. Use.—Sudorific. 10 grains contain 1 grain of opium.

Dose.—Grs. v. to ℈j.

SYNONYME.

Dover's powder.

Pulvis jalapæ compositus. *Compound powder of jalap.*

Lond. Ph. 1851.

℞ Jalap . . . . . ʒiij.
Bitartrate of potash . . ʒvj.
Ginger . . . . . ʒij.
Rub them separately to powder; then mix them.

Edin. Ph. 1841.

℞ Jalap, in powder . . . ʒj.
Bitartrate of potash . . ℥ij.
Triturate them to a very fine powder.

Dubl. Ph. 1850.

℞ Jalap, in fine powder . . ʒij.
Bitartrate of potash . . ʒiiiss.
Ginger, in fine powder . . ℥ss.
Mix thoroughly by trituration, and pass the powder through a fine sieve.

Med. Use.—A hydragogue purgative, useful in costiveness, worms, and in several forms of dropsy.

Dose.—Grs. xv. to grs. xl.

Pulvis kino compositus. *Compound powder of kino.*

Lond. Ph. 1851.

℞ Kino . . . . . ʒxv.
Cinnamon . . . . . ℥ss.
Dried opium . . . . ʒj.
Rub the powders separately into a very fine powder; then mix.

Med. Use.—Astringent and anodyne.

Dose.—Grs. v. to grs. xx.

Pulvis pro limonado. *Lemonade powder.*

℞ White sugar . . . . ℔iv.
Tartaric acid . . . . ʒj.
Cream of tartar . . . ʒiv.
Essence of lemon . . . ʒij.
Mix, and preserve the powder in bottles.

Pulvis magnesiæ cum rheo. *Pulvis pro infantibus. Powder of magnesia with rhubarb.*

Ph. Borussica, 1847.

℞ Carbonate of magnesia . . ℥j.
Elæosaccharum of fennel . ℥ss.
Rhubarb, powdered . . ʒij.
Orris root . . . . . ʒiss.
Mix, and keep in a well-stopped vessel.

Pulvis quercus marinæ. *Powder of the quercus marina.*

Dubl. Ph. 1807.

℞ Fucus vesiculosus, in flower, any quantity.

Dry and cleanse it; then expose it to heat in an iron vessel or a crucible, to which a perforated cover is adapted, till vapours cease to ascend, and the fucus has become of an obscure red heat. Then reduce to powder the carbonaceous matter which remains.

Pulvis e myrrha compositus. *Compound powder of myrrh.*

Lond. Ph. 1788.

℞ Myrrh.
Dried savine,
Dried rue,
Russian castor . . . āā ʒj.

Reduce them to powder, and mix them.

Pulvis Rhei Compositus. *Compound powder of rhubarb.*

Edin. Ph. 1841.

℞ Magnesia . . . . . ℔j.
Ginger in fine powder . . ʒij.
Rhubarb, in fine powder . ʒiv.

Mix them thoroughly, and preserve the powder in well-closed bottles.

Dubl. Ph. 1850.

℞ Rhubarb, in fine powder . ʒij.
Magnesia . . . . . ʒvj.
Ginger, in fine powder . . ʒj.

Mix thoroughly by trituration, pass the powder through a fine sieve, and keep it in well-closed bottles.

Med. Use.—A mild aperient in gout, &c.

Dose.—℈j. to ʒss.

SYNONYMES.

Gregory's Mixture. Gregory's Powder.

Pulvis Salinus Compositus. *Compound saline powder.*

Edin. Ph. 1841.

℞ Pure muriate of soda,
Sulphate of magnesia . āā ʒiv.
Sulphate of potash . . . ʒiij.

Dry the salts separately with a gentle heat, and pulverize each; then triturate them well together, and preserve the mixture in well-closed vessels.

Med. Use.—An excellent purgative.

Dose.—From 2 to 6 drachms in half a pint of water before breakfast.

Pulvis Scammonii Compositus. *Compound powder of scammony.*

Lond. Ph. 1851.

℞ Scammony,
Hard extract of jalap . āā ʒij.
Ginger . . . . . ʒss.

Rub them separately to very fine powder; then mix them.

Edin. Ph. 1841.

℞ Scammony,
Bitartrate of potash, āā equal parts.

Triturate them together to a very fine powder.

Dubl. Ph. 1850.

℞ Scammony, in fine powder ʒj.
Compound powder of jalap ʒiij.

Mix thoroughly by trituration, and pass the powder through a fine sieve.

Med. Use.—Cathartic.

Dose.—Grs. v. to grs. xx.

Pulvis e Scammonio cum Calomelane. *Powder of scammony with calomel.*

Lond. Ph. 1788.

℞ Scammony . . . . . ʒss.
Calomel,
White sugar . . . āā ʒij.

Rub them separately to powder, and mix them.

Dose.—For children, from gr. iij to gr. viij.

Pulvis e Senna Compositus. *Compound powder of senna.*

Dubl. Ph. 1788.

℞ Senna,
Cream of tartar . . āā ʒij.
Scammony . . . . . ʒss.
Ginger . . . . . ʒij.

Powder the scammony separately, and the other ingredients together, and mix them.

Pulvis Spongiæ Ustæ. *Powder of burnt sponge.*

Dubl. Ph. 1826.

Having cut the sponge into pieces, beat it to free it from little stones; burn it in a closed iron vessel until it becomes black and friable, and reduce it to powder.

Med. Use.—Deobstruent.

Dose.—ʒj to ʒiij.

Omitted in Ph. D. 1850.

PULVIS STERNUTATORIUS. *Snuff.*

Cephalic snuff.

Ph. Bat. 1805.

℞ Tobacco leaves,
Marjoram leaves,
Lavender leaves . . āā p. æ.

Let them be well dried, and reduced to powder.

Common snuff is powdered tobacco, sometimes mixed with other substances to increase its irritating effect on the membrane of the nose, and scented in different ways to suit the fancy of the consumer. See *Snuff*.

PULVIS TRAGACANTHÆ COMPOSITUS. *Compound powder of tragacanth.*

Lond. Ph. 1851, and Edin. Ph. 1841.

℞ Tragacanth, powdered,
Acacia, powdered,
Starch . . . . . āā ʒiss.
Sugar . . . . . ʒiij.

Rub the starch and sugar together to powder; then, the tragacanth and acacia being added, mix them all.

Med. Use.—Demulcent.

Dose.—Gr. x. to gr. ʒj.

SYNONYME.

Species Diatragacanthæ frigidæ.—Lond. Ph. 1721.

PUNCH.

An agreeable, intoxicating, acid drink.

Cold punch.

℞ Arrack,
Port wine,
Water. . . . . āā Oij.
White sugar . . . . . ℔j.
Juice of 8 lemons.

Mix.

Gin punch.

℞ Gin . . . . . ʒxij.
Water . . . . . Oiss.
Sherry . . . . . ʒij.
Sugar. . . . . ℔ss.
Juice and outside peel of 1 lemon.

Mix.

Iced punch.

℞ Champagne or Rhenish wine . Oij.
Arrack . . . . . Oj.
White sugar . . . . . ℔j.

Juice and outside peel of 6 lemons.

Mix, and put it into a freezing mixture.

Milk punch.

℞ Outside peel of 24 lemons, steeped for 2 days in Oiv of rum or brandy, then add,
Spirit . . . . . Oij.
Hot water . . . . . Ovj.
Lemon juice . . . . . Oij.
Sugar . . . . . ℔iv.
Boiling milk . . . . . Oiv.
2 nutmegs, grated.

Mix.

Tea punch.

℞ Hot tea . . . . . Oij.
Arrack . . . . . Oj.
White sugar . . . . . ʒiv.
Juice of 8 lemons.
Outside peel of 4 lemons.

Mix.

Wine punch.

℞ Arrack. . . . . Oij.
Port wine . . . . . Oij.
Hot tea . . . . . Ovj.
Sugar . . . . . ℔j.
Juice of 12 lemons.

Mix.

PURL.

A mixture of beer with spirit or bitters.

PUTTY, GLAZIER'S.

Whiting made into a paste with boiled linseed oil.

PUTTY, POLISHER'S.

Peroxide of tin, obtained by exposing melted tin in a reverberatory furnace, and calcining the dross which is raked from the surface of the melted metal.

PYROPHORUS. (From πυρ, fire, and φερω, I bear.)

A substance which ignites spontaneously when exposed to the air.

No. 1.

(Homberg's.)

℞ Alum,
Brown sugar . . . . . āā p. æ.

Mix, and expose the powder over the fire until dry; then put it into a Florence flask or glass tube, and keep it at a red heat until it ceases to emit flame; carefully close the mouth of the flask, and let it cool.

No. 2.

℞ Alum . . . . . 3 parts.
Flour . . . . . 1 part.

Proceed as with No 1.

No. 3.

℞ Lamp-black . . . . 3 parts.
Burnt alum . . . . 4 „
Carbonate of potash . . 8 „

Proceed as with No 1.

No. 4.

℞ Sulphate of potash . . . 9 parts.
Lamp-black . . . . 5 „

Proceed as with No. 1.

No. 5.

Enclose tartrate of lead in a glass tube and keep it at a red heat until flame or vapour is no longer emitted; then seal the open end of the tube at the blow-pipe flame.

PYROTECHNY. (From πυρ, fire, and τεχνη, art.)

The art of making fireworks.

Coloured fires:—

Blue fire.

℞ Nitre . . . . . 5 parts.
Sulphur . . . . . 2 „
Metallic antimony . . . 1 „

Mix.

Crimson fire.

℞ Chlorate of potash . . 4¼ parts.
Nitrate of strontia . . 67½ „
Charcoal . . . . . 5¾ „
Sulphur . . . . . 22½ „

Mix.

Green fire.

℞ Nitrate of baryta . . 62½ parts.
Sulphur . . . . . 10½ „
Chlorate of potash . . 23¾ „
Charcoal,
Sulphuret of arsenic, . . āā 1¾ „

Mix.

Lilac fire.

℞ Chlorate of potash . . 49 parts.
Sulphur . . . . . 25 „
Dry chalk . . . . 20 „
Black oxide of copper . 6 „

Mix.

Purple fire.

℞ Chlorate of potash . . 42 parts.
Nitre,
Sulphur . . . . āā 22¾ „
Black oxide of copper . 10 „
Sulphuret of mercury . 2¾ „

Mix.

Red fire.

℞ Dried nitrate of strontia . 72 parts.
Sulphur . . . . . 20 „
Gunpowder . . . . 6 „
Coal dust. . . . . 2 „

Mix.

White fire.

℞ Nitre . . . . . 46½ parts.
Sulphur . . . . . 23 „
Gunpowder . . . . 12¼ „
Zinc powder . . . . 18 „

Mix.

Yellow fire.

℞ Dried nitrate of soda . 74½ parts.
Sulphur . . . . . 19½ „
Charcoal . . . . . 6 „

Mix.

Note.—Some of these compositions are liable to undergo spontaneous combustion, when kept for some time, even when enclosed in bottles. Serious accidents have arisen from this cause.

QUINA. *Quinine.* $C^{20}H^{12}NO$.

A bitter alkaloid procured from cinchona bark. It does not crystallize with

the same facility as some of the other alkaloids, but may be obtained in small white needles. When required in its pure state, it is obtained by precipitating one of the salts of quina, such as the sulphate, with ammonia.

QUININE, AMORPHOUS.

Professor Liebig has applied this name to the part of quinoidine which is soluble in ether.

A patent was taken out, by Mr. Bullock, for the preparation of *Amorphous quinine* in this country; the process consists in treating *quinoidine* with ether, and evaporating the ethereal solution to dryness.

QUINIDINE.

A bitter alkaloid, found in some varieties of cinchona bark, associated with quinine which it resembles in many of its properties. It is less soluble than quinine in ether, and its salts are more soluble in water. It is said to have the same composition as quinine.

QUINOIDINE. *Chinoidine.*

A dark-brown or black substance, usually in masses, having somewhat the appearance of aloes, which is obtained by precipitation, on adding an alkali to the dark-coloured mother-liquor remaining after the crystallization of sulphate of quinine. It usually contains, besides amorphous quinine, a good deal of cinchonine, some crystallizable quinine, and the products of the decomposition of these and probably other bodies by the action of heat and other agencies.

QUINÆ ACETAS. *Acetate of quinine.*

Dissolve quina in diluted acetic acid to neutralization, with the aid of heat, and gently evaporate the solution until crystals are formed. It crystallizes in white, shining, satiny, acicular crystals, which are difficultly soluble in cold, but readily soluble in hot water.

QUINÆ CITRAS. *Citrate of quinine.*

For the mode of preparing this salt see page 748.

QUINÆ FERROCYANAS. See *Ferri et quinæ cyanidum.*

QUINÆ LACTAS. *Lactate of quinine.*

Dissolve quina in diluted lactic acid to neutralization, with the aid of heat, and leave the solution to evaporate spontaneously in a shallow vessel, exposed in a warm room, until crystals are formed.

QUINÆ DISULPHAS. *Disulphate of quina. Sulphate of quinine.*

Lond. Ph. 1851.

Note.—It is dissolved in water, especially if mixed with an acid. Ammonia being added to this, quina is thrown down; the solution being then evaporated; that which remains ought not to taste of sugar. Disulphate of quinine gives out 8 or 10 of water from 100 grains. It perishes in the fire. Recently-prepared chlorine being first added, and afterwards ammonia, it becomes green. 26·6 grains of sulphate of baryta, dried by a red fire, are procured from 100 grains dissolved in water, mixed with hydrochloric acid, on chloride of barium being added.

Edin. Ph. 1841. *Quinæ sulphas.*

℞ Yellow bark, in coarse powder	℔j.
Carbonate of soda	℥viij.
Sulphuric acid	f℥ss.
Purified animal charcoal . .	℥ij.

Boil the bark for an hour in 4 pints of water, in which half the carbonate of soda has been dissolved; strain and express strongly through linen or calico; moisten the residuum with water and express again, and repeat this twice. Boil the residuum for half an hour, with 4 pints of water, and half the sulphuric acid. Strain, express strongly, moisten with water, and express again. Boil the residuum with 3 pints of water, and a fourth part of the acid; strain and squeeze as before. Boil again the residuum with the same quantity of

water and acid, strain and squeeze as formerly. Concentrate the whole acid liquids to about a pint; let the product cool; filter it; and dissolve in it the remainder of the carbonate of soda. Collect the impure quina on a cloth, wash it slightly, and squeeze out the liquor with the hand. Break down the moist precipitate in a pint of distilled water, add one fluid scruple of sulphuric acid, heat it to 212°, and stir occasionally. Should any precipitate retain its grey colour, and the liquid be neutral, add sulphuric acid drop by drop, stirring constantly, till the grey colour disappears. Should the liquid redden litmus, neutralize it with a little carbonate of soda. Should crystals form on the surface, add boiling distilled water to dissolve them. Filter through paper, preserving the funnel hot; set the liquid aside to crystallize; collect and squeeze the crystals; dissolve them in a pint of distilled water, heated to 212°; digest the solution for 15 minutes with the animal charcoal; filter and crystallize as before. Dry the crystals with a heat not exceeding 140°. The mother-liquors of each crystallization will yield a little more salt by concentration and cooling.

Note.—A solution of 10 grains in a fluidounce of distilled water, and 2 or 3 drops of sulphuric acid, if decomposed by a solution of half an ounce of carbonate of soda in 2 waters, and heated with the precipitate, shrinks and fuses, yields on cooling a solid mass, which when dry weighs 7·4 grains, and in powder dissolves entirely in solution of oxalic acid.

Dubl. Ph. 1850. *Quinæ Sulphas.*

℞ Yellow bark in powder .	℔j.
Water	cong. iss.
Oil of vitriol of commerce	f℥ss.
Rectified spirit . . .	Oiij.
Slacked lime	℥j.
Animal charcoal . . .	℥ss.
Dilute sulphuric acid . .	f℥ss.

Or a sufficient quantity.

Macerate the bark for 24 hours with half a gallon of the water, acidulated with two drachms of the oil of vitriol; then boil for half an hour, and decant. Boil the residue with a second half gallon of the water, acidulated with 1 drachm of the oil of vitriol, and again decant, and let this process be a third time performed with the rest of the water, and the residual drachm of oil of vitriol. Let the decanted liquors be evaporated to the bulk of 1 quart, and filtered through calico when cold, and to the solution thus obtained add the lime, until the mixture becomes decidedly alkaline. The precipitate, collected on a calico filter, is to be washed with about a pint of cold water, and, when partially dried on porous bricks, to be enveloped in blotting paper and subjected to powerful pressure. The pressed mass must now be introduced into a flask containing a pint of the spirit, which is to be raised to and maintained at the temperature of ebullition for 20 minutes, and then, after the subsidence of the insoluble matter, decanted. The process having been repeated successively, with the second and third pints of spirit, and the undissolved residuum having been subjected to expression, let the decanted and expressed liquors be cleared by passing them through a paper filter, and then subjected to distillation, so as to recover the entire of the spirit. The brown viscid mass which remains is now to be mixed with 16 ounces of water, and this being raised to the boiling point, the dilute sulphuric acid must be added, so as to produce a neutral or very slightly acid solution. Add now the animal charcoal, boil for 5 minutes, filter, and set to cool, in order that crystals may be formed, which are to be dried on blotting paper by mere exposure to the atmosphere. The liquor decanted from the crystals will, by further concentration and cooling, yield an additional product.

Med. Use.—One of the most valuable tonics in use, as it possesses most of the virtues of the cinchona, freed from the inert woody fibre.

Dose.—Gr. ss. to gr. v.

QUINÆ HYDROCHLORAS. *Hydrochlorate of quina. Muriate of quinine.*

Dubl. Ph. 1850.

℞ Sulphate of quina . . ℥j.
Chloride of barium . . 123 grains.
Distilled water . . . ℥xxxij.

Dissolve the chloride of barium in 2 ounces of the water, and the sulphate of quinine in the remainder, raised to the temperature of ebullition. Mix the 2 solutions, evaporate to one half, filter, and continue the evaporation by means of a steam or water heat, until crystalline spiculæ begin to appear. The solution is now to be permitted to cool, and the crystals which separate to be dried on blotting paper. The liquor decanted off the crystals will, by further concentration and cooling, yield an additional product.

QUINÆ AND HYDRARGYRI CHLORIDUM. *Chloride of mercury and quinine.*

(Dermott.)

℞ Bichloride of mercury . . 1 part.
Hydrochlorate of quinine . 3 parts.

Dissolve the 2 salts separately in the smallest possible quantity of water, and mix the solutions. The double salt will separate in acicular crystals.

QUINÆ NITRAS. *Nitrate of quinine.*

This salt may be obtained either by neutralizing dilute nitric acid with quina, or by the decomposition of nitrate of baryta and sulphate of quinine. It is at first a fluid oil-like mass, which gradually becomes solid. In union with water it forms crystals. It dissolves with difficulty in water, but readily in alcohol.

QUINÆ PHOSPHAS. *Phosphate of quinine.*

This salt may be formed in the same way as the acetate, only substituting phosphoric for acetic acid. It resembles the hydrochlorate in appearance.

QUINÆ SULPHAS NEUTRALIS. *Neutral or soluble sulphate of quinine.*

℞ Disulphate of quina . . . ℥j.
Diluted sulphuric acid . . fʒv.
Water . . . . . ℥x.

Mix the disulphate of quinine with the water in a Wedgwood dish, add the acid, and apply heat until it is dissolved; then evaporate that crystals may be formed. It is soluble in 10 parts of water at 60°.

QUINÆ VALERIANAS. *Valerianate of quinine.*

Dubl. Ph. 1850.

℞ Muriate of quina . . . ʒvij.
Valerianate of soda . . 124 grs.
Distilled water . . . ℥xvj.

Dissolve the valerianate of soda in 2 ounces, and the muriate of quina in the remainder of the water, and, the temperature of each solution being raised to 120°, but not higher, let them be mixed, and let the mixture be set by for 24 hours, when the valerianate of quina will have become a mass of silky acicular crystals. Let these be pressed between folds of blotting paper, and dried without the application of artificial heat.

Instead of weighing out 7 drachms of muriate of quina, and dissolving it in water, as is above prescribed, we may employ the solution of the muriate prepared from an ounce of the sulphate, as directed in the formula for *Quinæ murias*, such solution having been first evaporated to 14 ounces. It may be observed here, that should it become necessary to evaporate a liquid containing valerianate of quina, care must be taken that its temperature does not rise higher than 120°.

RATAFIA.

A French term, indicating a sweet aromatic spirituous liquor. Ratafias are made by maceration, by distillation, or with the juice of fruits.

Ratafia d'angelique.

℞ Angelica seeds . . . . . ʒj.
Stalks of angelica,
Bitter almonds, blanched . āā ʒiv.
Brandy, or proof spirit . . Oxij.
Sugar . . . . . ℔ij.

Macerate for 4 days, strain, and filter.

Ratafia d'anis.

No. 1.

℞ Aniseed . . . . . ʒij.
Brandy, or proof spirit . . Oiv.
Sugar . . . . . ʒx.

Macerate for 4 days, strain, and filter.

Huile d'anis.

No. 2.

℞ Aniseed . . . . . ʒij.
Rectified spirit . . . . . Oiv.

Macerate for 4 days, and strain, then add,

Simple syrup . . . . . ℔iv.
Tincture of vanilla q. s. to flavour it.

Ratafia de café.

℞ Roasted coffee, ground . . ℔j.
Brandy, or proof spirit . . cong. j.
Sugar . . . . . ʒxx.

Macerate for 4 days, strain, and filter.

Ratafia de cassis.

℞ Black currants . . . . ℔vj.
Cloves . . . . . ʒss.
Cinnamon . . . . . ʒj.
Proof spirit. . . . . Oxviij.
Sugar . . . . . ℔iiiss.

Macerate for a week, and strain.

Ratafia de cerises.

℞ Morello cherries, with their kernels bruised . . . ℔viij.
Proof spirit. . . . . Oviij.
Sugar . . . . . ℔iss.

Macerate for a week, and strain.

Ratafia de chocolat.

℞ Chocolate or cacao seeds, roasted . . . . . ℔j. ʒviij.
Proof spirit . . . . cong. j.

Macerate for a week, and strain, then add,

Sugar . . . . . ℔j. ʒviij.
Tincture of vanilla q. s. to flavour it.

Ratafia de coings.

℞ Juice of quinces . . . Ovj.
Cinnamon . . . . . ʒiij.
Coriander seed . . . . ʒij.
Cloves . . . . . gr. xv.
Mace . . . . . ʒss.
Bitter almonds . . . ʒvj.
Rectified spirit . . . Oiij.
Sugar. . . . . ℔ij ʒviij.

Macerate for a fortnight, and strain.

Ratafia de framboises.

℞ Raspberries . . . . . ℔viij.
Proof spirit . . . . . Oiv.
Sugar . . . . . ʒxij.

Macerate for 4 days, and strain.

Ratafia de geniévre.

℞ Juniper berries . . . . ʒij.
Proof spirit . . . . . Oiv.
Sugar . . . . . ʒx.

Macerate for a week, and strain.

Ratafia de brou de noix.

℞ Young walnuts, unripe . No. 60.
Brandy. . . . . Oiv.
Sugar . . . . . ʒxij.
Mace, cinnamon, cloves āā gr. xv.

Macerate for a month, press out the liquor, and strain it. It should be kept for 2 or 3 years.

Ratafia de noyau.

℞ Peach or apricot kernels, bruised . . . . . No. 120.
Proof spirit . . . . Oiv.
Sugar . . . . . ʒx.

Macerate for a week, and strain.

Ratafia d'œillets.

℞ Clove pink petals . . . ℔iv.
Cinnamon,
Cloves . . . . . āā gr. xv.
Proof spirit. . . . . cong. j.
Sugar . . . . . ℔j.

Macerate for a week, and strain.

Ratafia d'ecorçe d'orange.

℞ Fresh peel of Seville oranges	℥iv.
Proof spirit	cong. j.
Sugar	℔j.

Macerate for 4 days, and strain.

Ratafia de fleurs d'oranges.

℞ Fresh orange flowers	℔ij.
Proof spirit	cong. j.
Sugar	℔j. ℥viij.

Macerate for 4 days, and strain.

Ratafia de Tolu.

℞ Balsam of Tolu	℥ij.
Rectified spirit	Oj.
Boiling water	Oiij.
Sugar	℔j. ℥viij.

Dissolve the balsam in the spirit, and the sugar in the water, and mix the 2 solutions.

Ratafia à la violette.

℞ Orris root	ʒij.
Proof spirit	Oiv.
Sugar	℔j. ℥viij.

Macerate for 4 days, and strain. It may be coloured with cochineal.

Regulus, (from *rex*, *regis*, a king.)

A name originally given by the alchemists to metallic bodies when separated from other substances by fusion, from their expectation of finding gold, the *king* of metals, at the bottom of the crucible; hence the name *Regulus of Antimony*, of *Cobalt*, &c.

Rennet.

A pickle consisting of the stomachs of calves, preserved in brine or dry salt.

Resina cannabis indicæ. *Cannabine. Resin of Indian hemp.*

Messrs. T. and H. Smith.

Digest ℔ij. of bruised Indian hemp or gunjah in several repeated quantities of warm water, pressing the plant after each operation. Then digest the plant in a solution of ℔j. of carbonate of soda in water; pour off the liquor, and wash the plant with water until it passes colourless. Dry the plant, and macerate it in rectified spirit, or treat it with the spirit by percolation. To the spirituous solution add ℥ij of quick-lime slaked and mixed with as much water as will give it the consistence of cream. Filter the mixture, and add to it f℥ij of oil of vitriol diluted with a little water; again filter. Recover the greater part of the spirit by distillation, and to that which remains add 3 or 4 times its volume of water to precipitate the resin, which is to be washed with water until it comes away tasteless. The resin is now to be carefully dried.

Resina jalapæ. *Resin of jalap.*

Several methods have been proposed for obtaining this resin. The best appears to be that which consists in treating jalap with rectified spirit and then distilling off the spirit. The tincture, before evaporation, is sometimes decolorized by animal charcoal; and instead of evaporating the solution to dryness, it is sometimes evaporated until the greater part of the spirit is recovered, and then water added to precipitate the resin.

Resina mezerei. *Resin of mezerian.*

Ph. Badensia, 1841.

℞ Mezerian bark, cut	℔iij.
Rectified spirit	℔xvj.
Ether	q. s.

Moisten the mezerian bark with a little spirit, and pound it in an iron mortar, then macerate it for 8 hours in a water-bath, with ℔vij. of the rectified spirit; press, and treat it again with ℔v. of spirit, and finally with ℔iv. of spirit. Mix the tinctures, and distil to one-fourth, then filter to separate the green resin. Evaporate the liquor, and a brown resin will be obtained, which together with the green resin is to be treated with ether as long as the latter becomes green. Distil the ether

off, and treat the residue with spirit of 20° B., which will leave the green resin undissolved.

Note.—Green, of the consistence of butter. Soluble in ether, absolute alcohol, fixed and essential oils, and does not become rancid.

Resina pini Burgundica. *Burgundy pine resin. Resin of Abies excelsa. Burgundy pitch.*

Ph. Borussica, 1847.

A resin, either tough, yellowish, opaque, and softened by the heat of the hand, or friable, of a reddish-yellow colour, slightly transparent, with a shining fracture, and terebinthine odour. It is prepared from the resin that exudes spontaneously from the trees, by boiling in water and melting.

Rheum ustum. *Burnt rhubarb. Toasted rhubarb.*

Heat powdered rhubarb in an iron or earthen vessel, constantly stirring it until it assumes a dark-brown colour, then cover the vessel closely until it is cold.

Roob. (Arabic, for dense.)

A term formerly applied to inspissated juices.

Roob dyacaryon. *Rob of walnuts.*

℞ Juice of green walnut husks . ℔iv.
Honey . . . . . ℔ij.

Boil until reduced to the consistence of clarified honey.

Roob diamorum. *Rob of mulberries.*

℞ Juice of mulberries . . . ℔iv.
Honey . . . . . ℔ij.

Boil until reduced to the consistence of clarified honey.

Roob juniperi. *Succus juniperi inspissatus. Inspissated juice of juniper. Rob of juniper.*

Ph. Borussica, 1847.

℞ Juniper berries, fresh bruised . . . . . 1 part.
Warm water . . . . 4 parts.

Pour the water on the berries, and when cold, press them gently. Set by the liquor that the dregs may subside, and evaporate it, when strained, first with a gentle heat, and then in a vapour-bath, at a temperature of 149° to 167° Fahr., to the consistence of a thick syrup, and keep it in a cold dry place in well-stopped vessels.

Note.—It should be brown, and soluble in water, forming a turbid solution.

Roob sambuci. *Rob of elder-berries. Succus sambuci inspissatus. Elder rob.*

℞ Juice of elder-berries . . . ℔iv.
Sugar . . . . . ℔j.

Boil until reduced to the consistence of clarified honey.

Ph. Borussica, 1847.

℞ Elder-berries, fresh and ripe.
White sugar, powdered.

Put the berries in a tinned vessel, exposed to the heat of a vapour-bath, and continue the heat until they burst, frequently shaking them; then press out the juice, set it by that the dregs may subside, and when strained, evaporate it in a vapour-bath, at a temperature of 149° to 167° Fahr., to the consistence of a thick extract; and whilst warm, add to every pound of the product 1 ounce of white sugar, and keep in a dry and cold place.

Note.—It should be of a violet-brown colour, and slightly acid taste, producing a slightly turbid solution with water.

Rotten-stone. *Terra cariosa.*

This mineral is obtained principally from Derbyshire. It is used for polishing metals, &c. It occurs in light, dull, friable masses, of a brown colour, and soft to the touch.

Rusma.

A black or dark-coloured mineral found in Galatia, and much used by the Turks; mixed with half its weight of quick-lime, as a depilatory. It is said to contain arsenic.

Saccharum. *Sugar.*

A sweet substance existing in animal and vegetable secretions, and also obtained by the action of chemical agents on starch, gum, and other organic bodies.

There are two principal kinds of sugar, which differ from each other in composition and in some of their properties. These are distinguished as *Cane-sugar*, and *Grape-sugar*; the sugar obtained from the *sugar-cane*, *Saccharum officinarum*, being taken as the type of the former, and that obtained from the grape, *Vitis vinifera*, as the type of the latter.

Each of these kinds of sugar is capable of existing in two different conditions, as *crystallizable* and as *uncrystallizable* sugar.

Cane-sugar,

Is procured in greatest abundance from the sugar-cane. Nearly all the sugar consumed in this country is derived from this source. The juice of the canes is usually extracted by submitting them to pressure between horizontal-grooved rollers; it is then clarified by heat, and free acid neutralized with lime. The clarified juice is immediately concentrated by evaporation, and run into wooden vessels to crystallize. The crystallized sugar, thus obtained, is called *Muscovado, or Raw-sugar*; the uncrystallizable portion is called *molasses*.

The concentration of the cane-juice is effected in some of the colonies by evaporation *in vacuo*, when a larger proportion of crystallizable sugar, and of a better quality is obtained, than is the case when the evaporation is conducted in an open pan. This process being hitherto principally confined to the island of Demerara, the sugar so obtained is called *Demerara crystallized sugar*.

Sugar is chiefly imported into this country in the state of *Raw sugar* and *Molasses*. From the molasses a considerable quantity of crystallized sugar is obtained in this country, and the uncrystallizable portion then remaining constitutes what is called *Treacle*.

Raw sugar is purified by the process called *sugar refining*. This process consists in dissolving the sugar; neutralizing the acid with lime; boiling it with *Bullock's blood*, or a substance called *Finings*, consisting of *Hydrate of alumina* and *Sulphate of lime*; passing the syrup through a stratum of *Animal charcoal*, to remove the colouring matter; concentrating the decolorized syrup in a *vacuum pan*; putting it to crystallize in *conical moulds*; and removing the last portions of colouring matter by allowing a solution of pure sugar to percolate through the conical masses, or loaves.

Cane-sugar is extensively made in France from the *Beet-root*, the juice of which is submitted to a process similar to that above described.

In the United States of America, and in Canada, sugar is obtained from the juice of the maple-tree (*Acer saccharinum*, Linn.). The juice is procured by boring holes about three-fourths of an inch in diameter, to the depth of half an inch or an inch into the alburnum of the trunk of the tree, 18 or 20 inches above the ground. From these holes the juice flows into vessels placed for the purpose of collecting it. The sugar is extracted from the juice in a similar manner to that adopted with the cane-juice. This sugar also comes under the denomination of *Cane-sugar*.

In the East Indies sugar is obtained from the kitul tree (*Caryota urens*); from the cocoa-nut tree (*Cocus nucifera*); and from the palmyra tree (*Borassus flabelliformis*). The impure sugars obtained from these sources are called *jaggeries*.

In China, sugar is obtained from the *Saccharum sinense*, which is said to yield a richer juice than the cane used in our plantations.

A large grass, *Holcus cafer*, brought from the South of Africa, has been cultivated in some parts of Italy, Bavaria, and Hungary, as a source of sugar, which it is said to yield in great abundance.

The fruit of the strawberry-tree (*Arbutus unedo*) has been found to yield one-fifth of its weight of sugar.

Sugar-candy, Saccharum crystallinum,

Is cane-sugar slowly crystallized from a solution. There are three kinds of this commonly made, *the brown*, *the white*, and *the red*. *Brown sugar-candy* is obtained from a saturated solution of unrefined sugar, by leaving it in a warm place, at a temperature from 90° to 100° Fahr., with pieces of stick or string left in the solution to promote crystallization. *White sugar-candy* is obtained in like manner from a solution of refined sugar. *Red sugar-candy* is crystallized from a solution of refined sugar that has been coloured with cochineal.

Sugar-candy being longer in dissolving than common sugar, is on this account preferred, in cases of cough, to keep the throat moist.

Grape-sugar. Glucose.

Sugar obtained from grapes differs, as already stated, from that procured from the other sources above alluded to. The juice of ripe grapes is called *must*. Must, boiled to two-thirds, is called *carenum*. When boiled to one-half, it is called *sapa*. On further concentration it will yield a granular sugar, which is less soluble in water, and has less power of sweetening, than cane-sugar.

Grape-sugar may be obtained from many other sources besides the grape. It constitutes the sweetening principle in many of the fruits and other parts of vegetables grown in our climate. Thus apples, pears, gooseberries, currants, &c., abound in this kind of sugar. It constitutes also the sugar of Diabetes.

The most economical method of obtaining grape-sugar is by acting on starch or lignin with sulphuric acid. Large quantities of sugar have been thus made in this country. Linen rags have been used for making sugar by this process.

Grape-sugar cannot be obtained in a regular crystalline form like cane-sugar. When crystallized, it assumes the cauliflower form, consisting of small tufts of crystals.

Cane-sugar is capable of being converted into grape-sugar by the action of chemical agents. Thus, on boiling cane-sugar with diluted acids, it is converted into grape-sugar. Boiling alone, when long continued, will effect this change.

Both cane and grape sugar exist in the uncrystallizable as well as the crystallizable condition; and the crystallizing power of sugar may be destroyed by the action of heat and of chemical agents.

Barley-sugar,

Is a species of uncrystallizable sugar. It is made by boiling a strong syrup until the crystallizing power of the sugar is destroyed; or by promoting this object by the addition of a little cream of tartar, or tartaric acid. Infusion of malted barley was formerly used instead of an acid, and hence the name *barley-sugar*.

Mushroom-sugar.

A particular kind of sugar is obtained from some species of mushrooms, which is distinguished by the above name.

SACCHARUM LACTIS. *Sugar of milk.*

Clarify common whey with white of egg, then evaporate it with the heat of a water-bath until it crystallizes on cooling, and put it in a cold place that crystals may form. The crystallization is sometimes promoted by putting pieces of stick or string into the solution, round which the crystals are deposited.

Sugar of milk is imported into this country from Switzerland, where it is made on the large scale.

Saccharum penidium. Lond. Ph. 1677. *Saccharum Hordeatum.* Lond. Ph. 1721. *Penidium. Barley-sugar.*

Lond. Ph. 1721.

Dissolve sugar in a decoction of barley, briskly beat it up with white of egg, and boil it over a slow fire, frequently skimming it; then strain it through flannel, and again set it over the fire to boil slowly until large bubbles are formed during the ebullition, and, on taking some of it out of the pan, it is found not to stick to the teeth. Remove it from the fire, and when the bubbles have subsided, pour it on to a marble slab, previously rubbed over with oil of almonds, and as it tends to spread out, turn the extremities back towards the centre, until it acquires the consistence of thick turpentine. It is now to be suspended by a hook attached to some convenient place, and with hands covered with starch, it is to be dexterously pulled out into thin, thick, short, or long pieces, at pleasure, and laid on a plate to harden.

Saccharolatum lichenis islandici. *Pulvis Pectoralis Trossii.*

Codex Medic. Hamberg, 1845.

℞ Iceland moss, cut. . .	℔j.
Water.	℔xxxij.
Rectified spirit . . .	℔iv.
Sugar	℥viij.

Boil the Iceland moss with ℔xvj of water down to one-half, then strain and press the residue, and treat it again in the same way with the rest of the water. Afterwards, boil the united decoctions down to ℔v., and when half cold, add the rectified spirit; separate the precipitate by filtration, and, while moist, add the sugar, and dry it in the vapour-bath, continually stirring, and lastly powder it.

Note.—It is a pale-yellowish-grey powder, without odour, having a sweet slimy taste. It forms a jelly with three parts of boiling water.

Sacculus. (Diminutive of *saccus*, a bag.) *A sachet.*

A small bag for containing substances which are used on account of their effluvia.

Sachets are principally employed for communicating agreeable perfumes from dry vegetable substances to wearing apparel or furniture. The substances put into them are similar to those used in making *pot pourrie*, only that they are in powder. The following may be taken as a specimen:—

Sachet powder.

℞ Powdered cloves,	
Powdered cassia . .	āā ℥j.
Powdered orris root . .	℥iss.
Powdered yellow sandal-wood	ʒj.
Otto of roses	gtt. xxiv.
Oil of lavender,	
Oil of bergamot . .	āā ʒj.
Musk.	gr. vj.

Mix.

Sagie mottie. *Sagi mati.*

A very coarse kind of barilla, prepared in India. It has an earthy appearance, and a yellowish-grey colour.

Sal gemmæ. *Rock salt. Fossil salt.*

Native crystallized chloride of sodium.

The name *sal gemmæ* has been applied to this kind of salt from its transparence, and resemblance in this respect to a precious stone (*gemma*). In this country it is found in great abundance in Cheshire, Staffordshire, &c., and on the Continent in the salt mines of Poland, &c. It is sometimes colourless, sometimes more or less coloured reddish, or of a slate colour.

Sal limonum. *Salt of lemons.*

℞ Salt of sorrel or quadroxalate of potash . . .	2 parts.
Cream of tartar . . .	1 part.

Mix.

Sal polychrestus glaseri. *Glaser's polychrest salt.*

Prepare *Potassæ sulphas cum sulphure* according to the process described at page 900, and as soon as the deflagration is over, raise the heat, keep the mass in fusion for some time, pour it out, dissolve it in water; filter, and evaporate the solution, that crystals may form as it cools.

Note.—The *potassæ sulphas cum sulphure*, without farther preparation, is sometimes sold under this name.

Sal prunella. *Sore-throat salt.*

Fused nitrate of potash cast in moulds, so as to form either balls or flat cakes.

Salicina. *Salicine.*

Codex, Ph. Franç. 1839.

No. 1.

Make a strong decoction of willow bark; strain; add to it a milk of lime, to throw down the colouring matter; filter the liquor, evaporate it to the consistence of a syrup, then add a sufficient quantity of alcohol, at sp. gr. 847, to throw down the gummy matter; filter again; separate the alcohol by distillation. The residue of this distillation, sufficiently evaporated and put into a cool place, will deposit the salicine, which will crystallize in flattened needles.

To purify it, it will be necessary to dissolve it in boiling water, to add to it a little animal charcoal, to filter and make it crystallize on cooling.

No. 2.

Make a strong decoction of willow bark; concentrate this to a small bulk; decolorize the liquor by digesting powdered oxide of lead in it; decant the clear liquor, and remove the lead from the solution by means of sulphuric acid and sulphuretted hydrogen; finally, concentrate the liquor that crystals may form. Purify it by recrystallization, using a little animal charcoal.

Note.—Pure salicine presents itself in fine flattened needles, somewhat pearly; its taste is bitter, and resembles that of willow; it is neither acid nor alkaline; burnt on a platinum plate, it leaves no residuum.

Sandiver. *Glass gall.*

A saline scum that rises to the surface of the melted glass in the melting-pot. It consists of sulphate of soda, sulphate of lime, &c.

Santoninum. *Santonine.*

Ph. Badensia, 1841.

℞ Wormseed, powdered . . 4 parts.
Hydrate of lime . . . 1½ part.

Mix and repeatedly treat them with spirit, sp. gr. 0·93°. Distil three-fourths of the spirit off, and evaporate the remainder to one-half, which at a boiling temperature is to be mixed with excess of acetic acid; water is then to be added, and the mixture left standing that the impure santonine may subside; which is to be washed with a small quantity of spirit, then dissolved in 10 parts of boiling spirit, decolorized with animal charcoal, strained, and allowed to crystallize. When dry, to be kept in opaque bottles. Colourless, in prismatic or tabular crystals, without smell, having rather a bitter taste. Soluble in from 4000 to 5000 parts of cold, and 250 parts of hot water; and in 45 parts cold, and 2 parts of hot spirit; and in 75 parts cold, and 42 parts of hot ether.

Sapo. *Soap.*

A combination of a fatty acid or resin with an alkali, used for the purposes of washing, &c. The acids which usually enter into the composition of soaps are the stearic, margaric, and oleic acids, and those existing in common resin and in palm oil. Potash and soda are the alkalies used.

Soaps may be divided into two kinds, *hard soaps* and *soft soaps*, the former being made with soda, the latter with

potash. In the London Pharmacopœia, 1836, the term *Sapo* is applied to indicate "soap made of olive oil and soda;" and *Sapo mollis*, "Soap made of olive oil and potash."

Hard soaps.

Castile soap. Sapo Castiliensis. Sapo Hispanicus.

The soap sold under this name is partly imported and partly made in this country. It is, or ought to be, made from olive oil and soda. It is met with in two states, white and mottled. Of these the white is the most pure; the other has the mottled character given to it, by adding a solution of sulphate of iron to the soap while still fluid, and after being poured into the moulds.

Lond. Ph. 1851. *Sapo.*

Soap made from olive oil and soda.

Edin. Ph. 1841. *Sapo durus.*

Spanish or Castile soap, made with olive oil and soda.

Note.—White: it does not stain paper, is free of odour, and dissolves entirely in rectified spirit.

Curd soap.

The best of the white soaps used for domestic purposes. It is made from tallow and soda.

Common white soap.

This is made from tallow, bleached palm oil, and other kinds of fat, with soda. It differs from the preceding kind principally in the quality of the fat used.

Mottled soap.

This is one of the two last-named soaps, mottled in the same way as Castile soap. The mottling is said to be the best security against the adulteration of the soap after it leaves the manufactory.

Yellow soap.

In the manufacture of this soap, resin and sometimes palm oil is mixed with the tallow, which are saponified with soda.

Toilet soaps.

These are made by mixing essential oils, colouring matters, and sometimes other ingredients, with the best curd soap.

The superiority of a toilet soap depends principally on the quality of the rough soap used in making it. These soaps are generally named according to the predominant scents imparted to them.

Transparent soap.

Mix equal parts of the best curd soap in thin shavings, and rectified spirit of wine; apply the heat of a water-bath until the soap is perfectly dissolved, then scent it according to fancy, and colour it with burnt sugar or tincture of turmeric. Pour it into moulds, and leave it exposed to the air for several weeks to harden.

Windsor soap, white.

This is merely the best curd soap scented with oils of caraways, lavender, and origanum, and tincture of musk.

Windsor soap, brown.

This differs from the preceding in being coloured with burnt sugar.

Wash balls.

These differ only from other kinds of toilet soap, in being usually mottled or streaked with different colours, in a particular manner. This is done by mixing portions of the soap, previously scented, with powdered blue, powdered bole, or other colouring matters of this kind, and then, the soap being slightly softened by heat, mixing the different coloured masses together.

Soft soaps.

Sapo mollis. Soft soap.

Lond. Ph. 1851.

Soap made from olive oil and potash.

Common soft soap made from fish oil, suet, and potash, is, by no means, to be used for this.

Edin. Ph. 1841.

Soft soap, made with olive oil and potash.

Almond soap. Sapo amygdalinus.

Made by saponifying oil of almonds with solution of potash.

Black soap.

A very inferior soft soap, made with fish oils and refuse grease, saponified with potash, and sometimes coloured with lampblack.

Common soft soap.

Made with fish oils, tallow, &c., saponified with potash.

Naples soap.

This soap is imported from Naples. It is supposed to be made from olive oil and potash.

MEDICATED SOAPS.

SAPO ANTIMONIALIS. *Antimonial soap.*

Codex. Medic. Hamberg. 1845.

℞ Golden sulphuret of antimony . . . . . ℥ij.
Solution of caustic potash . ℥vj.
Medicated soap . . . . ℥iss.

Dissolve the golden sulphuret of antimony in the caustic potash, then rub it with the medicated soap until it assumes a pilular consistence, adding more solution of potash if necessary. Then dry it by a gentle heat, and keep it in small bottles.

To be sold with precautions.

Note.—Of a greyish-white colour, soluble in water; becoming intensely orange-yellow, on the addition of muriatic acid, and disengaging sulphuretted hydrogen gas.

Ph. Danica, 1840.

℞ Golden sulphuret of antimony . . . . . ℥j.
Solution of potash . . . q. s.
Castile soap (powdered) . ℥vj.

Dissolve the golden sulphuret of antimony in the solution of potash diluted with twice its volume of water, then filter and add the Castile soap, and evaporate it to a pilular consistence. If it be still red, add more caustic potash, until it becomes greyish-white.

Note.—It should be soluble in water, and become of an orange colour on the addition of an acid evolving sulphuretted hydrogen.

SAPO CROTONIS. *Croton oil soap.*

No. 1.

℞ Croton oil . . . . 2 parts.
Solution of potash . . . 1 part.

Rub them together until they combine, without the application of heat.

No. 2.

Croton oil saponified with potash, or with soda, in the usual way, with heat.

SAPO GUAIACINUS. *Guaiacum soap.*

Ph. Danica, 1840.

Take any quantity of caustic potash and heat it with twice its volume of distilled water; add powdered guaiacum until some remains undissolved. Strain and evaporate it to a pilular consistence.

Note.—It should be of a greenish-brown colour, smelling and tasting of guaiacum, and not too alkaline; dissolved in water, it should form a clear solution.

Ph. Borussica, 1847.

℞ Liquor potassæ . . . . ℥j.
Distilled water . . . . ℥ij.

Mix and heat the mixture in a porcelain vessel; then add gradually

Resin of guaiacum, in powder, ℥vj., or as much as will dissolve. Filter the solution, and evaporate it to a pilular consistence.

SAPO JALAPINUS. *Jalap soap.*

Ph. Borussica, 1847.

℞ Resin of jalap,
Castile soap . . . . āā ℥ij.
Rectified spirit of wine . . ℥iv.,

or sufficient to soften the ingredients by digestion with a gentle heat. Subsequently evaporate by the heat of a water-bath, constantly stirring the mixture, until it is reduced to ℥ivss, and has acquired the consistence of a pill-mass.

Codex. Medic. Hamberg, 1845.

℞ Resin of jalap,
Soap, āā p. æ.

Dissolve them in rectified spirit, and evaporate in a water-bath to a pilular consistence.

To be sold with precaution.

Note.—It is of a greyish-brown colour, soluble in rectified spirit.

Sapo piceus.

Ph. Castr. Ruthena, 1840.

℞ Solution of potash,
Common tar, āā p. æ.

Boil in an iron vessel to the consistence of soap, constantly stirring it.

Soft and black.

Sapo terebinthinæ. *Soap of essential oil of turpentine. Starkey's soap.*

Ratier and Henry's Ph.

℞ Subcarbonate of potash, perfectly dry,
Essential oil of turpentine,
Venice turpentine, āā equal parts.

Triturate the carbonate of potash in a mortar first with the essential oil, then the turpentine. When these substances have attained the proper consistence, porphyrize them, and preserve the soap in an earthenware vessel.

Codex Medic. Hamberg. 1845.

Sapo terebinthinatus. Balsamum vitæ externum. Turpentine soap. Liniment of turpentine.

℞ Alicant soap	ʒiij.
Oil of turpentine	ʒiij.
Carbonate of potash	ʒss.

Mix.

Saponine. *Ganteine. Paste for cleaning gloves.*

℞ Powdered soap	250 parts.
Solution of chloride of potash	165 ,,
Solution of ammonia	10 ,,
Water	155 ,,

Dissolve the soap in the water with heat, and as the mixture cools, add the other ingredients. A small quantity of this is to be rubbed over the glove with a piece of flannel, until the dirt is removed.

Sauces.

Condiments used for flavouring or seasoning food.

Chetney sauce.

℞ Stoned raisins	ʒiv.
Sour apples, or crabs	ʒviij.
Brown sugar	ʒiv.
Powdered ginger, Common salt, Cayenne pepper	āā ʒij.
Garlic	ʒj.
Vinegar	q. s.

Pound the solid ingredients together in a mortar, adding a little vinegar from time to time, until the whole is reduced to a pulpy mass; then add enough vinegar to reduce it to the consistence of cream, and bottle it for use.

Coratch.

℞ Mushroom catsup	℔vi.
Walnut catsup	℔j.
Indian soy, Chillie vinegar	āā ʒiv.
Essence of anchovies	ʒj.

Mix.

Fish sauce.

℞ Port wine	cong. j.
Mountain wine	Oij.
Walnut catsup	Oiv.
Anchovies, with the liquor	℔ij.
Lemons	No. 8.
Shallots	No. 32.
Cayenne pepper	ʒij.
Scraped horseradish	℔ij.
Mace	ʒj.
Flour of mustard	ʒviij.

Boil gently, strain, and bottle.

Kitchiner's relish.

℞ Black pepper, Salt	āā ʒj.
Powdered allspice, Scraped horseradish	āā ʒss.

Shallots, cut small . . . ℥ss.
Walnut pickle, or mushroom catsup . . . . . Oj.
Macerate for 14 days, and strain.

Sauce piquante.

℞ Soy . . . . . ℥j.
Port wine,
Cayenne pepper . . . āā ℥ij.
Best vinegar . . . . . Oj.
Macerate for a week, and strain.

Quin's sauce.

℞ Walnut pickle,
Port wine . . . . āā Oj.
Mushroom catsup . . . Oij.
Anchovies,
Shallots. . . . . āā No. 24.
Soy . . . . . Oss.
Cayenne pepper. . . . ʒij.
Boil for 10 minutes, strain, and bottle.

Soy.

Boil ℔iv of the seeds of *Dolichos soja* with water until they become soft; then add ℔iv of bruised wheat. Keep the mixture in a warm place for 24 hours, then add ℔iv of common salt, and ℔viij of water; put the mixture into a stone jar, and cork it up for 2 or 3 months, then press out the liquor.

The best soy is imported from China.

Tomato sauce.

℞ Bruised tomatoes . . . cong. j.
Salt . . . . . ℥viij.
Mix, and after 3 days squeeze out the juice. To each half gallon of the juice add,
Shallots . . . . . ℥iv.
Black pepper . . . . . ʒij.
Boil for half an hour, strain, and add,
Mace,
Allspice,
Ginger,
Nutmegs . . . . . āā ℥ss.
Coriander seed,
Cochineal. . . . . āā ʒij.
Simmer gently for half an hour, strain, and when cold, bottle it.

Scouring drops, *for removing grease spots from silks, &c.*

No. 1.

℞ Distilled essence of lemon . ℥ij.
Camphor . . . . . ℥j.
Rectified spirit . . . . ℥vj.
Mix.

No. 2.

Benzine or *benzole,* one of the light hydro-carbons obtained by distillation from coal-tar naphtha, answers well for removing grease spots from silks, &c.

Sealing-wax.

The basis of the best sealing-wax is shellac and dammar, or anime resins, but inferior sorts are made with common resin. The light-coloured resins, which will burn well, and flow in a semi-fluid state, are selected for receiving the light and delicate colours which are imparted by the admixture of certain pigments.

Red sealing-wax.

No. 1.

℞ Shellac . . . . . ℔ij.
Venice turpentine . . . ℔j.
Vermilion, or best dichromate of lead . . . . ℔iss.
Melt the shellac and turpentine together with heat, and add the pigment as the mixture cools.

No. 2.

℞ Shellac . . . . . ℔ij.
Dammar, or anime resin . ℔iv.
Venice turpentine . . . ℔j.
Vermilion, or best dichromate of lead . . . . ℔ij.
Mix as No. 1.

No. 3.

℞ Shellac . . . . . ℔ij.
Common yellow resin . . ℔iv.
Venice turpentine . . . ℔iss.
Dichromate of lead . . . ℔ij.
Mix.

Black sealing-wax,

Is made in the same way as the red, only substituting the best lamp-black for vermilion or dichromate of lead.

In like manner, other colours are imparted by varying the pigment, and using chromate of lead, verdigris, green verditer, &c.

Gold sealing-wax,

Is made by using gold-coloured talc, or bisulphuret of tin.

Marbled sealing-wax.

Melt in separate vessels a portion of wax of each colour intended to be mixed, and when they are partly cooled, mix them together, slightly stirring the mixture with a rod.

Soft sealing-wax.

℞ Bees'-wax . . . . . ℔iv.
Venice turpentine . . . ℔j.

Levigated bole, sufficient to give the required colour.

Bottle-wax.

℞ Black resin . . . . . ℔vj.
Bees'-wax . . . . . ℔ss.
Ivory, or lamp-black . . ℔iss.

Mix, with heat.

Venetian red, red lead, or bole, may be substituted for lamp-black.

Semoule. *Semoulina.*

The name given in France, and used in this country, to denote the large hard grains of wheat flour retained in the bolting machine, after the fine flour has been passed through its meshes. The best *semoule* is obtained from the wheat of the southern parts of Europe. The fine white Parisian bread, called *gruau*, is said to be made from *semoule*—*Ure*.

Serum lactis. *Whey of milk.*

Ph. Borussica, 1847.

℞ Milk . . . . . ℔iij.
Tartaric acid, powdered. . ʒj.

Add the acid to the milk just as it commences to boil, and when the coagulation is complete, strain the cooled liquor.

Note.—It should be turbid, and of a yellowish-white colour, and should not taste acid.

Serum lactis acidum. *Acid whey.*

Plenck's Ph.

℞ Cow's milk, deprived of the cream . . . . . ℔ij.
Cream of tartar. . . . ʒj.

After one boil, let it be strained through bibulous paper. Coagulation may also be effected with 2 spoonfuls of vinegar or lemon-juice.

Serum lactis aluminatum. *Whey of milk with alum. Aluminous whey.*

Ph. Borussica, 1847.

℞ Milk . . . . . ℔iij.
Alum, powdered . . . ʒj.

Add the alum to the milk just as it commences to boil, and when the coagulation is complete, strain.

Note.—It should be rather opalescent, and of a styptic taste.

Plenck's Ph.

℞ Cow's milk, boiling . . . ℔j.
Crude alum . . . . . ʒj.

When the milk has coagulated, let the whole be strained.

Serum lactis aurantiatum. *Oranged whey.*

Plenck's Ph.

℞ Cow's milk, boiling . . . ℔j.

Let the juice of half or of an entire orange be digested in it, with a portion of the peel. When coagulation has taken place, let it be strained.

Serum lactis cerevisiatum. *Whey with beer.*

℞ Cow's milk, boiling . . . ℔j.
Good beer . . . . . ℥iij.

Boil together until coagulation has taken place: then strain.

Serum lactis dulce. *Sweet whey.*

Plenck's Ph.

℞ Cow's milk, deprived of its cream . . . . . ℔iv.
A piece of prepared calf's rennet.

Let them be put in a warm place, until the caseine has coagulated; then separate the serum.

Serum lactis tamarindinatum. *Whey with tamarinds.*

Ph. Borussica, 1847.

℞ Milk . . . . . ℔iij.
Tamarind pulp . . . . ℥j.

Add the pulp to the milk just as it commences to boil, and when the coagulation is complete, strain.

Note.—It should be clear, of a reddish-yellow colour, and acid taste.

Plenck's Ph.

℞ Cow's milk, boiling . . . ℔j.
Tamarinds . . . . . ℥ij.

Boil them together until coagulation has taken place.

Serum lactis vinosum. *Wine whey.*

Plenck's Ph.

℞ Cow's milk, boiling . . . ℔j.
Rhenish wine . . . . ℥ij.

The milk having coagulated, let the whey be strained.

Sherry-cobler.

A favourite beverage with the Americans.

Half fill a tumbler-glass with clean pounded ice; add a table-spoonful of powdered white sugar, a few thin slices of lemon with the peel, or some strawberries or other similar fruit, bruised, and a wine-glassful or more of sherry wine; mix them together, and, as the ice melts, suck the liquor through a straw.

Other wine may be substituted for sherry.

Sherbet. (Arabic.)

A cooling drink, used in the East, made of the acidulous juices of fruits, sweetened and flavoured to suit the palate.

Sillabub.

An agreeable beverage made with milk or cream and wine.

℞ Wine . . . . . ℥xij.
Cream or New milk . . . . . ℥iv. or ℥xij.

The juice of half a lemon, and some of the peel rubbed with sugar sufficient to sweeten it. A little nutmeg is sometimes added.

Other spirituous liquors besides wine are sometimes used.

Whipt sillabub.

The above "whipt" into a froth.

Snuff.

A powder used for stimulating the olfactory nerves. It usually consists of tobacco, prepared in different ways, and sometimes mixed with other substances, which are added, either to alter its flavour, or to increase its stimulating properties. The tobacco, previous to its being ground into snuff, is submitted to a kind of fermentation, by leaving it in heaps, wetted with water, or with solution of salt, called the *sauce*, which is added from time to time during a period of from one to three months. The flavour and character of the snuff depend in a great measure on the way in which the process of fermentation is conducted, and especially the length of time during which it is continued.

Snuffs are of two kinds, which are distinguished as *moist snuffs* and *dry snuffs*.

In grinding the *moist snuffs*, the tobacco is moistened several times during the process, it is said, with some perfumed water, such as rose or orange-flower water; it is also sifted very frequently, to prevent its being reduced to too fine a powder. Solution of sugar, and of carbonate of potash, are sometimes added, to prevent the snuff from becoming dry.

In grinding the *dry snuffs*, no moisture is used, but other ingredients are frequently added, such as lime, sal ammoniac, powdered glass, &c.

Mills are generally employed in powdering snuffs, which are commonly called snuff-mills.

Moist snuffs include *Black* and *Brown rappee*, *Cuba*, *Carotte*, *Prince's mixture*, *Princeza*, &c.

Dry snuffs include *Scotch*, *Irish*, *Welsh*, and *Spanish snuffs*, *Lundyfoot*, &c.

The Tonca bean, either whole or in the form of an essence, musk, ambergis, and many of the volatile oils, are used for scenting snuffs.

Soda pura. *Pure soda. Hydrate of soda.*

This is prepared in the same way as *hydrate of potash*, only substituting carbonate of soda for carbonate of potash.

Sodæ acetas. *Acetate of soda.*

Dubl. Ph. 1850.

℞ Crystallized carbonate of soda of commerce . . . . ℔j.
or a sufficient quantity.
Acetic acid of commerce (sp. gr. 1044) . . . . . Oj.

To the acid, placed in a porcelain capsule, add by degrees the carbonate of soda, and, taking care that there shall be a slight excess of acid, evaporate the resulting solution till a pellicle begins to form on its surface, and set it by to crystallize. The crystals, when drained of the mother-liquor, and dried by a short exposure to the air on a porous brick, should be enclosed in a well-stopped bottle.

SYNONYMES.

Terra Foliata Tartari Crystallisata.
Terra Foliata mineralis.

Sodæ arsenias. *Arseniate of soda.*

Codex, Ph. Franç. 1839.

℞ Nitrate of soda . . . 100 parts.
Arsenious acid . . . 116 parts.

Thoroughly mix the ingredients together; heat them to redness in a Hessian crucible; treat the residue with water; add to it a solution of carbonate of soda until the mixture is alkaline; then evaporate it until crystals shall form on cooling.

Sodæ Carbonas. *Carbonate of soda.*

This carbonated alkali was formerly derived principally from kelp and barilla, but it is now made on a very large scale from common salt. The salt is first decomposed with oil of vitriol, sulphate of soda being thus formed, and hydrochloric acid disengaged from the mixture. The sulphate of soda is then mixed with small coal (which is used for the sake of its carbon) and carbonate of lime, and the mixture is heated in a furnace. The carbon of the coal deprives the sulphate of soda of its oxygen, reducing it to the state of sulphuret of sodium, which heated in contact with carbonate of lime, yields carbonate of soda and oxysulphuret of calcium (sulphuret of calcium and lime). This last product is insoluble in cold or lukewarm water, and the carbonate of soda is therefore separated from it by treating the fused mixture with warm water. The carbonate of soda is purified by repeated crystallization.

Lond. Ph. 1851.

Note.—Destitute of colour, transparent; exposed to the air, it soon falls into powder. It is dissolved in water. This solution changes the colour of turmeric into brown. When it has been supersaturated with hydrochloric acid, chloride of barium throws down nothing from thence. 100 grains of carbonate of soda lose 62·5 grains of water, by a sharp fire; just so much, added to diluted sulphuric acid, evolves 15·28 grains of carbonic acid.

Edin. Ph.

Note.—A solution of 21 grains in a fluidounce of distilled water, precipitated by 19 grains of nitrate of baryta, remains precipitable by more of the test; and the precipitate is entirely soluble in nitric acid. Little subject to adulteration.

Use.—Antacid.

Dose.—Grs. x to ʒss. twice or three times a-day.

SYNONYMES.

Natron præparatum. Lond. Ph. 1788.

Sodæ subcarbonas. Lond. Ph. 1809, 1824; Edin. Ph. 1839.

Mild mineral alkali. Fossil alkali. Aerated mineral alkali. Natron carbonicum.

Sodæ carbonas exsiccata. *Dried carbonate of soda.*

Lond. Ph. 1851.

℞ Carbonate of soda . . . . ℔j.

Apply heat to the carbonate until the crystals fall to pieces, and afterwards heat it to redness. Lastly, rub it into powder.

Note.—It is dissolved in water. 100 grains of this added to diluted sulphuric acid, evolve 40·7 grains of carbonic acid.

Edin. Ph. 1841.

Heat any convenient quantity of carbonate of soda in a shallow vessel until it is dry, then urge it with a red heat in a crucible, and reduce it to powder when cold.

Dubl. Ph. 1850. *Sodæ Carbonas Siccatum.*

℞ Crystallized carbonate of soda of commerce, any convenient quantity.

Expose it in a porcelain capsule to a pretty strong sand heat, until the liquid which first forms is converted into a dry cake, and having rubbed this to powder enclose it in a bottle.

Med. Use.—Antacid.

Dose.—From 4 to 20 grains.

SYNONYME.

Sodæ subcarbonas exsiccata.—Lond. Ph. 1809, 1824.

Sodæ bicarbonas. *Bicarbonate of soda.*

Edin. Ph. 1841.

Fill with fragments of marble a glass jar, open at the bottom and tubulated at the top; close the bottom in such a way as to keep in the marble without preventing the free passage of a fluid; connect the tubulature closely, by a bent tube and corks, with an empty bottle, and this in like manner with another bottle filled with one part of carbonate of soda, and two parts of dried carbonate of soda well triturated together, and let the tube be long enough to reach the bottom of the bottle. Before closing the last cork closely, immerse the jar to the top in diluted muriatic acid contained in any convenient vessel; when the whole apparatus is thus filled with carbonic acid gas, secure the last cork tightly, and let the action go on till next morning, or till gas is no longer absorbed by the salt. Remove the damp salt which formed, and dry it, either in the air without heat, or at a temperature not above 120°.

Note.—A solution in forty parts of water does not give an orange precipitate with solution of corrosive sublimate.

Dubl. Ph. 1850.

℞ Crystallized carbonate of soda of commerce	℔ij.
Distilled water	Oij.
Muriatic acid of commerce .	Oiss.
Water	Oiij.
Chalk in fragments . . .	℔j.

or a sufficient quantity.

Having diluted the muriatic acid with the water, and dissolved the carbonate of soda in the *distilled* water, manipulate with these solutions and with the chalk, as directed in the formula for *Potassæ Bicarbonas*, employing also the arrangement of apparatus there described. With the view, however, of obtaining from the mother-liquor an additional quantity of bicarbonate, it is not necessary that the evaporation shall be preceded by a filtration.

Lond. Ph. 1851.

Note.—It is dissolved in water; it slightly changes the colour of turmeric to brown; neither bichloride of platinum, nor sulphate of magnesia, unless on heat being applied, throw down anything from this solution; that which chloride of barium throws down is dissolved in hydrochloric acid. 100 grains

of this, added to diluted sulphuric acid, evolve 51·7 of carbonic acid.

Use.—Similar to that of the carbonate.

Dose.—Gr. x. to gr. xxx.

SYNONYME.

Sodæ Carbonas.—Lond. Ph. 1824, and Edin. Ph. 1839.

Sodæ cholEas. *Choleate of soda.*

This is one of the principal ingredients in ox-gall, or bile, which consists essentially of *Choleate of soda*, and cholesterine.

Inspissated ox-gall, or bile. Fel tauri inspissatum.

Evaporate fresh ox-gall by the heat of a water-bath until it assumes a pilular consistence. Thus prepared, it will contain a portion of mucus, in addition to the essential constituents of the bile.

Med. Use.—It has been used as a tonic, and more recently, on the recommendation of Dr. Allnutt, as a remedy for constipation, administered as a clyster, (ʒij. dissolved in Oj. of hot water,) or in pills, five or ten grains, two or three times a day.

Purified ox-gall, or bile. Fel tauri purificatum.

Treat the inspissated ox-gall with rectified spirit, which dissolves all but the mucus. The colouring matter may be removed by digesting the solution with a little animal charcoal, or by cautiously adding baryta water, which throws down the colouring matter. The colourless solution may now be evaporated to dryness. It will consist of *Choleate of soda* and *Cholesterine*.

Choleate of soda may be separated from the cholesterine by mixing a concentrated alcoholic solution of purified and decolorized ox-gall with twice its volume of ether, when the choleate of soda separates in a thick syrupy form, and after being washed with ether may be dried, forming a pulverulent mass like gum-arabic.

Sodæ hyposulphis. *Hyposulphite of soda.*

Codex, Ph. Franç. 1839.

℞ Carbonate of soda, crystallized	320 parts.
Distilled water . . .	640 parts.
Sublimed sulphur . .	40 parts.

Dissolve the carbonate of soda in the water, and mix the sulphur with the solution; pass through it a stream of sulphurous acid gas. When the gas shall be in excess in the liquor, the latter will contain hyposulphite of soda in solution. It is now to be boiled for some minutes, then filtered, gently evaporated to one-third of its volume, and put in a cold place that crystals may form.

Hyposulphite of soda crystallizes in four-sided prisms. Treated with sulphuric acid, it disengages sulphurous acid, and sulphur is precipitated.

Sodæ phosphas. *Phosphate of soda.* $2N_aO,HO,PO^5,24HO$.

Edin. Ph. 1841.

℞ Bones burnt to dryness	℔x.
Sulphuric acid . . .	Oij. & fʒiv.
Carbonate of soda . .	q. s.

Pulverize the bones and mix them with the acid; add gradually six pints of water; digest for three days, replacing the water which evaporates; add six pints of boiling water, and strain through strong linen: pass more boiling water through the mass on the filter till it comes away nearly tasteless. Let the impurities subside in the united liquors, pour off the clear liquid, and concentrate to six pints. Let the impurities again settle, and to the clear liquor, which is to be poured off and heated to ebullition, add carbonate of soda, previously dissolved in boiling water, until the acid is completely neutralized. Set the solution aside to cool and crystallize. More crystals will be obtained by successively evaporating, adding a little carbonate of soda till the liquid exerts a feeble alkaline reaction on litmus-paper, and then allowing it to

cool. Preserve the crystals in well-closed vessels.

Note.—An efflorescent salt; 45 grains dissolved in 2 fluidounces of boiling distilled water, and precipitated by a solution of 50 grains of carbonate of lead in a fluidounce of pyroligneous acid, will remain precipitable by solution of acetate of lead.

Dubl. Ph. 1850.

℞ Ox-bones, burned to whiteness in a clear fire. . ℔x.
Oil of vitriol of commerce. f℥Lvj.
Distilled water . . . Civss,
or a sufficient quantity.
Crystallized carbonate of soda of commerce . . ℔xij,
or a sufficient quantity.

On the bone earth, reduced to a fine powder, and placed in a large dish of earthenware, or lead, pour the oil of vitriol, and mix well with a glass or porcelain rod, so that every particle of the powder may be moistened by the acid. After the lapse of 24 hours, add gradually, and with constant stirring, one gallon of distilled water, and digest for 48 hours, pouring on occasionally a little water, so as to restore what has been lost by evaporation. Add now a second gallon of the water, and, having well agitated the mixture, and continued the digestion for another hour, let the whole be thrown upon a calico filter; and, when the liquid has ceased to trickle through, let the precipitate be repeatedly washed with boiling distilled water, until the washings, allowed to drop on blue litmus paper, redden it only in a very slight degree. Concentrate the filtered solution and washings to the bulk of 1 gallon, and, having set it by for 24 hours, pass it through a filter. To the filtered solution, raised to the temperature of 212° degrees, gradually add the carbonate of soda, previously dissolved in 2 gallons of boiling water, until the mixture acquires a slight alkaline reaction, and then place the whole upon a calico filter. The clear solution which passes through, when concentrated until a film begins to form on its surface, will, upon cooling, afford crystals of phosphate of soda; and from the mother-liquor an additional product may be obtained by further concentration. The salt, when dried on blotting-paper, should be preserved in a well-stopped bottle.

Lond. Ph. 1851.

Note.—Exposed to the air it effloresces a little. It is dissolved in water. This solution slightly changes the colour of turmeric into brown; what is thrown down from it by chloride of barium is white, and is dissolved without effervescence in nitric acid; and that by nitrate of silver is yellow, and is dissolved in the same acid. It loses 62·3 of water from 100 grains by a red fire. What is thrown down by nitrate of silver from the remaining salt dissolved in water is white.

Med. Use.—A mild saline cathartic, particularly adapted for individuals affected with deposits of uric acid in the urine, as it possesses a remarkably solvent action on that acid.

Dose.—ʒiv. to ʒxij.

SYNONYMES.

Sal mirabile perlatum. Tasteless salt. Rhombic phosphate of soda.

Sodæ potassio-tartras. *Potassio-tartrate of soda.*

Lond. Ph. 1851.

Note.—It is dissolved in water. This solution changes the colour of neither litmus nor turmeric. Sulphuric acid being added, bitartrate of potash is thrown down; either nitrate of silver or chloride of barium being added, nothing is thrown down, or what is dissolved again on the water being added.

Edin. Ph. 1841. *Sodæ et potassæ tartras.*

℞ Bitartrate of potash . . ℥xvj.
Carbonate of soda. . . ℥xij.
Boiling water . . . . Oiv.

Proceed with this preparation exactly as for the tartrate of potash.

Note.—Entirely and easily soluble in five parts of boiling water; muriatic acid

occasions a crystalline precipitate in a strong solution; 37 grains in solution are not entirely precipitated by 43 grains of nitrate of lead.

Dubl. Ph. 1850. *Sodæ et potassæ tartras.*

℞ Crystallized carbonate of soda of commerce . . ℥ix.
White bitartrate of potash, in fine powder . . . ℥xij,
or a sufficient quantity.
Distilled water . . . Css.

Dissolve the carbonate of soda in the water, and to the solution, while boiling hot, gradually add the bitartrate, until a neutral solution is obtained. Let this be filtered, evaporated till a pellicle forms on its surface, and then set to crystallize. After 12 hours the solution should be decanted off the crystals, and these, when dried on blotting-paper, should be preserved in a bottle. By further concentrating the decanted solution, and cooling it, an additional crop of crystals may be obtained.

℞ Carbonate of soda . . 5 parts.
Bitartrate of potash, reduced to the finest powder . . . . 7 parts.
Hot water . . . . 50 parts.

To the carbonate of soda dissolved in water, gradually add the bitartrate of potash; let the liquor, filtered through paper, evaporate, and set it aside that, by slow cooling, crystals may form.

Use.—Purgative.

Dose.—℥ij. to ℥j.

SYNONYMES.

Natron tartarizatum. Lond. Ph. 1788.
Soda tartarizata. Lond. Ph. 1809, 1824.
Tartaras sodæ et kali. Dubl. Ph. 1807.
Scl de seignette.
Rochelle salt. Sal rupellensis.
Sal polychrestum seignette.

Sodæ sulphas. *Sulphate of soda.*

Lond. Ph. 1851.

Exposed to the air it falls into powder. It is dissolved in water. This solution changes the colour of neither litmus nor turmeric; nitrate of silver throws down scarcely anything from the diluted solution. It loses 55·5 of water from 100 grains by a sharp fire. Moreover, 71 grains of sulphate of baryta, dried by a sharp fire, are procured from 100 grains dissolved in distilled water, chloride of barium and hydrochloric acid having been added.

Edin. Ph. 1841.

℞ Salt which remains after preparing pure muriatic acid . . . . . ℔ij.
Boiling water . . . . Oiij.
White marble, in powder . q. s.

Dissolve the salt in the water, add the marble so long as effervescence takes place, boil the liquid, and, when neutral, filter it; wash the insoluble matter with boiling water, adding the water to the original liquid; concentrate till a pellicle begins to form, and then let the liquid cool and crystallize.

Note.—Not subject to adulteration.

Dubl. Ph. 1850.

Sodæ sulphas. *Sulphate of soda. Glauber salts.*

Use.—Purgative.

Dose.—℥ss. to ℥iss.

SYNONYMES.

Sal catharticus Glauberi. Lond. Ph. 1747.
Natron vitriolatum.—Lond. Ph. 1788.
Sal mirabili Glauberi. Glauber's salt.

Soda tartarizata effervescens. *Acidulated kali. Lemonated kali.*

℞ Powdered white sugar . ℔iv.
„ Bicarbonate of soda,
„ Tartaric acid, āā ℔ij.
„ Bitartrate of potash . . ℥ij.
Essence of lemon . . . ℥ij.

Dry the powders separately; mix them

together, then add the essence of lemon, and keep the mixture in bottles.

Dubl. Ph. 1850.

Sodæ valerianas. *Valerianate of soda.*

℞ Bichromate of potash, reduced to powder	℥ix.
Fusel oil	f℥iv.
Oil of vitriol of commerce	f℥viss.
Water	Css.
Solution of caustic soda	Oj.

or as much as is sufficient.

Dilute the oil of vitriol with 10 ounces, and dissolve with the aid of heat the bichromate of potash in the remainder of the water. When both solutions have cooled down to nearly the temperature of the atmosphere, place them in a matrass, and, having added the fusel oil, mix well by repeated shaking until the temperature of the mixture, which first rises to about 150°, has fallen to 80° or 90°. The matrass having been now connected with a condenser, heat is to be applied so as to distil over about half-a-gallon of liquid. Let this, when exactly saturated with the solution of caustic soda, be separated from a little oil that floats on its surface, and evaporated down until, the escape of aqueous vapour having entirely ceased, the residual salt is partially liquefied. The heat should now be withdrawn, and when the valerianate of soda has concreted, it is, while still warm, to be divided into fragments and preserved in a well-stopped bottle.

Sodii chloridum. *Sodæ murias. Chloride of sodium. Culinary salt. Common salt.* NaCl.

Salt is obtained from sea-water, from salt or brine-springs, and in the solid state from the earth.

Sea-water is evaporated in some parts of France and on the shores of the Mediterranean by the heat of the sun, and the salt obtained in this way is called *Bay salt.*

In this country, most of the salt is procured from *brine springs* in Cheshire, Staffordshire, and other parts. The water of these springs is evaporated in large pans, and the salt is deposited during the process. Salt is also, to a small extent, obtained from sea-water in this country.

In the neighbourhood of the brine springs, salt also occurs in the solid state in the earth, and this is called *rock salt*, or *fossil salt.* (See *Sal gemmæ.*)

Sodæ murias purum. Pure muriate of soda.

Edin. Ph. 1841.

Take any convenient quantity of muriate of soda, dissolve it in boiling water, filter the solution, and boil it down over the fire, skimming off the crystals which form; wash the crystals quickly with cold water, and dry them.

Note.—A solution is not precipitated by solution of carbonate of ammonia followed by solution of phosphate of soda; a solution of 9 grains in distilled water is not entirely precipitated by a solution of 26 grains of nitrate of silver.

Sodii sulpho-antimoniatum. *Schlippe's antimonial salt.*

Strasb. Ph.

℞ Carbonate of soda, crystallized	9 parts.
Water	40 „
Sesquisulphuret of antimony	4 „
Sulphur	1½ „
Milk of lime (2½ parts of lime to 7 water)	10 „

Dissolve the soda in water; add the other ingredients, boil for two and a half hours, and crystallize.

Solder.

A metallic alloy, used for uniting the surfaces of metals. Solders differ in composition according to the kind of metals intended to be united by them.

Solder for tin plate.

℞ Tin	2 parts.
Lead	1 part.

Mix.

Solder for pewter.

℞ Tin . . . . . 10 parts.
Lead . . . . . 5 „
Bismuth . . . . . 1 part.
Mix.

Solder for iron, copper, and brass. Spelter.

℞ Copper,
Zinc . . . . . āā p. æ.
Mix.

Solder for zinc and lead.

℞ Lead . . . . . 2 parts.
Tin . . . . . 1 part.
Mix.

Solder for silver.

℞ Silver . . . . . 5 parts.
Brass . . . . . 6 „
Zinc . . . . . 2 „
Mix.

Solder for gold.

℞ Silver and gold,
or
Copper and gold.

SOLUTIO ARGENTI AMMONIATI. *Ammoniated solution of silver.*

Edin. Ph. 1841.

℞ Nitrate of silver . . . 44 gr.
Distilled water . . . . f℥j.
Aqua ammoniæ, a sufficiency.

Dissolve the salt in the water, and add the aqua ammoniæ gradually, and towards the end cautiously, till the precipitate at first thrown down is very nearly but not entirely, redissolved.

Use.—A delicate test for arsenious acid.

SYNONYNE.

Hume's test for arsenious acid.

SOLUTIO BARYTÆ NITRATIS. *Solution of nitrate of baryta.*

Edin. Ph. 1841.

℞ Nitrate of baryta . . . . . 40 gr.
Distilled water . . . . 800 „

Dissolve the salt in the water; and keep the solution in well-closed bottles.

This is intended as a test.

SOLUTIO COPAIBÆ ALKALINI. *Alkaline solution of copaiba.*

℞ Copaiba . . . . . ℥ij.
Solution of potash . . . ℥iij.
Water . . . . . ℥vij.

Boil for a quarter of an hour, put the liquor into an oil separater, let it stand for an hour or two, or until the volatile oil has separated from the aqueous solution; then draw off the latter and preserve it for use.

This solution consists of the resin of copaiba combined with the potash as a soluble soap, which retains a small portion of volatile oil.

SOLUTIO MORPHIÆ BIMECONATIS. *Solution of bimeconate of morphia.*

A preparation is sold under this name which contains the morphia in the state of combination in which it exists in opium. It is not perfectly pure, as it retains to a certain extent the taste and smell of the opium, and is not free from colour. It is made of the same strength as laudanum, and is given in similar doses.

No process has been published for its preparation.

SOLUTIO MORPHIÆ MURIAS. *Solution of muriate of morphia.*

Edin. Ph. 1841.

℞ Muriate of morphia . . . ℥iss.
Rectified spirit . . . . f℥v.
Distilled water . . . . f℥xv.

Mix the spirit and water, and dissolve the muriate of morphia in the mixture with the aid of a gentle heat.

Dose.—From ♏x. to ♏xx. About 106 minims contain one grain of muriate of morphia.

SOLUTIO SODÆ PHOSPHATIS. *Solution of phosphate of soda.*

[Edin. Ph. 1841.]

℞ Phosphate of soda . . . 175 gr.
Distilled water . . . . f ℥viij.

Dissolve the salt in the water, and keep the solution in well-closed bottles.

This is intended as a test.

SOLUTIO PRO ARGENTO. *Solution for whitening silver.*

℞ Bitartrate of potash,
Chloride of sodium,
Alum . . . . . āā ℥j.
Water . . . . . Oiij.

Dissolve.

Plate boiled in this solution acquires a brilliant whiteness.

SOLUTIO MINERALIS. *De Vallenger's solution of arsenic.*

℞ Arsenious acid . . . . gr. iss.
Hydrochloric acid . . . f ℥ss.
Water . . . . . f ℥j.

Dissolve.

This is essentially the same as the liquor arsenici chloridi of the Lond. Ph. 1851.

SPECIES AROMATICÆ. *Loco specierum pro cucupha. Aromatic powder.*

Ph. Borussica, 1847.

℞ Balm leaves,
Leaves of curled leaved mint (Mentha crispa) āā ℥iv.
Lavender flowers . . ℥ij.
Cloves . . . . . ℥j.

Well cut and bruise them, reduce them to a fine powder, and mix.

Note.—Keep it in a close vessel.

SPECIES AD DECOCTUM LIGNORUM. *Ingredients for decoction of woods.*

Ph. Borussica, 1847.

℞ Guaiacum wood rasped. . ℔ij.
Great burdock root (Lappa major) sliced,
Root of "Ononis spinosa" sliced . . . . . āā ℔j.
Liquorice root sliced,
Sassafras wood . . . āā ℔ss.

Mix.

SPECIES AD INFUSUM PECTORALE. *Ingredients for pectoral infusion.*

Ph. Borussica, 1847.

℞ Mallow root . . . . . ℥iv.
Liquorice root . . . . . ℥iss.
Orris root . . . . . ℥ss.
Coltsfoot leaves . . . . ℥ij.
Red poppy flowers,
Great mullein flowers,
Anise seeds . . . . āā ℥j.

Slice and bruise them, and mix them well together.

SPECIES LAXANTES ST. GERMAIN. *Species prothea St. Germain. St. Germain laxative powder.*

Ph. Borussica, 1847.

℞ Senna leaves exhausted with spirit . . . . . ℥iv.
Elder flowers . . . . . ℥iiss.
Fennel seeds,
Anise seeds, ... āā ʒx.

Well cut and bruise them and mix together, and when dispensing, add

Purified cream of tartar powdered, ʒvj.

SPICES.

Warm aromatic substances used for seasoning.

Ragout spice.

℞ Salt . . . . . ℔j.
Flour of mustard,
Black pepper,
Grated lemon peel . . āā ℔ss.
Allspice, ginger,
Nutmeg . . . . . āā ʒij.
Cayenne pepper . . . . ℥ij.

Mix.

Sausage spice.

℞ Black pepper . . . . ℔v.
Cloves, nutmegs . . āā ℔iss.
Ginger . . . . . ℔iiss.
Aniseed, Coriander seed, āā ℥viij.

Savoury spice.

Kidder's.

℞ Cloves,
Mace,
Nutmegs,
Pepper,
Salt . . . . . āā ℔j.
Mix.

Sweet spice.

Kidder's.

℞ Cloves,
Mace,
Nutmegs,
Cinnamon . . . . . āā ℔j.
Mix.

SPIRITUS ACETICO-ÆTHEREUS. *Liquor anodynus vegetabilis. Spirit of acetic ether.*

Ph. Castr. Ruthena, 1840.

℞ Acetic ether . . . . 1 part.
Rectified spirit . . . 3 parts.
Mix.

SPIRITUS ÆTHERIS AROMATICUS. *Aromatic spirit of ether.*

Lond. Ph. 1824.

℞ Cinnamon . . . . . ʒiij.
Cardamom seeds . . . ʒiss.
Long pepper,
Ginger . . . . . āā ʒj.
Spirit of sulphuric ether . f ʒxvj.
Macerate for 14 days in a stoppered bottle, and strain.

SPIRITUS ÆTHERIS CHLORATI. *Spiritus salis dulcis.*

Ph. Borussica, 1847.

℞ Chloride of sodium, dried ʒxvj.
Binoxide of manganese, powdered . . . . ʒvj.
Crude sulphuric acid (sp. gr. 1·845) . . . ʒxij.
Rectified spirit (sp. gr. ·813) . . . . . ℔iv.
Calcined magnesia . . ʒiij. vel. q. s.

Mix the acid and spirit carefully together, and add them to the chloride of sodium and binoxide of manganese put in a retort. Distil 42 ounces, and add to it the magnesia until the solution is neutral, then pour off the liquor, and repeat the distillation, and keep the product in well-stopped vessels.

Note.—It should be clear, colourless, not acid, and have a sp. gr. ·815 to ·820.

Ph. Cast. Ruthena, 1840.

Spiritus muriatico ethereus. Spirit of muriatic ether.

℞ Common salt . . . 16 parts.
Manganese . . . . 6 ,,
Sulphuric acid . . . 12 ,,
Rectified spirit . . . 48 ,,
Distilled water . . . 32 ,,

First put into the retort the common salt and manganese, then add the other ingredients, being previously mixed, and distil into a well-cooled receiver. Rectify the distilled product from calcined magnesia.

Note.—Colourless, of an agreeable aromatic odour, and somewhat bitter taste; quite neutral, sp. gr. ·84.

SPIRITUS ÆTHERIS SULPHURICI. *Spirit of sulphuric ether.*

Lond. Ph. 1824.

℞ Sulphuric ether . . . f ʒviij.
Rectified spirit . . . . f ʒxvj.
Mix.

Edin. Ph. 1841.

℞ Sulphuric ether . . . Oj.
Rectified spirit . . . . Oij.
Mix them. The density of this preparation ought to be ·809.

SYNONYMES.

Æther sulphuricus cum alcohol.—Edin. Ph. 1839.

SPIRITUS ÆTHERIS COMPOSITUS. *Compound spirit of sulphuric ether. Hoffman's anodyne liquor.*

Lond. Ph. 1836.

℞ Ether . . . . . f ℥viij.
Rectified spirit . . . . f ℥xvj.
Ethereal oil . . . . f ℥iij.
Mix.

Dubl. Ph. 1850. *Spiritus æthereus oleosus.* (*Liquor æthereus oleosus.*)

℞ Rectified spirit . . . . Oiss.
Oil of vitriol of commerce . Oiss.
Sulphuric ether . . . f ℥v.

Mix the oil of vitriol with 1 pint of the rectified spirit, in a matrass of glass, and, connecting this with a Liebig's condenser, apply heat, and distil, till a black froth begins to rise. Separate the uppermost or lighter stratum of the distilled liquid, and, having exposed it in a capsule for 24 hours to the atmosphere, let the residual oil be transferred to a moist paper filter, and washed with a little cold water, so as to remove any adhering acid. Let it now be introduced into a bottle containing the remainder of the spirit mixed with the ether, and dissolved.

Use and Dose.—The same as sulphuric ether.

SYNONYMES.

Spiritus ætheris vitriolici compositus.—Lond. Ph. 1788.

Spiritus ætheris compositus—Lond. Ph. 1809.

Spiritus sulphurica-æthereus martiatus. *Liquor anodynus martiatus. Tinctura nervina Bestuscheffii.*

Ph. Hannov. Nova, 1831.

℞ Sulphuric ether . . . . ℥ij.
Perchloride of iron . . . ℥ss.
Rectified spirit . . . . ℥iv.

Shake the ether and perchloride of iron together in a bottle; separate the solution, mix it with the spirit, and expose the mixture, in tall well-stoppered bottles, to the rays of the sun until it has become colourless.

Ph. Borussica, 1847.

Spiritus ferri chlorati æthereus. Liquor anodynus martiatus. Ethereal spirit of chloride of iron.

℞ Solution of sesquichloride of iron (sp. gr. 1·540) . . ℥ij.
Spirit of ether . . . . ℥iv.

Expose the mixed solutions, in well-stopped cylindrical glass vessels, to the rays of the sun, until they are perfectly colourless. Then set them aside in a shady place until a slightly-yellow solution is obtained, occasionally opening the vessel. Keep the solution in well-stopped glass bottles.

Note.—It should be clear, of a slight yellowish colour, and have a sp. gr. ·835 to ·840. 100 parts contain one of iron.

Codex, Medic. Hamberg. 1845.

Spiritus muriatico-ætherius martiatus. Liqueur de lamotte.

℞ Rectified spirit . . . . ℔j.
Solution of muriate of iron . ℥iij.

Mix, and put in the sun, in long, lightly-covered glasses, until it has lost its colour; then put it into a dark place, until it has become a palish-gold colour.

Spiritus ammoniæ. *Spirit of ammonia.*

Not ordered in the Lond. Ph. 1851, and Dubl. Ph. 1850.

Lond. Ph. 1836.

℞ Hydrochlorate of ammonia ℥x.
Carbonate of potash . . ℥xvj.
Rectified spirit,
Water . . . . . āā Oiij.
Mix them, and let 3 pints distil.

Edin. Ph. 1841.

℞ Rectified spirit . . . . Oij.
Fresh-burnt lime . . . ℥xij.
Muriate of ammonia, in very fine powder . . ℥viij.
Water . . . . . f ℥viss.

Let the lime be slacked with the water in an iron or earthenware vessel, and cover the vessel till the powder be cold; mix the

lime and muriate of ammonia quickly and thoroughly in a mortar, and transfer the mixture at once into a glass retort; adapt to the retort a tube which passes nearly to the bottom of a bottle containing the rectified spirit; heat the retort in a sand-bath gradually, so long as anything passes over, preserving the bottle cool. The bottle should be large enough to contain one-half more than the spirit used.

Note.—It has a density about ·845, and a strong ammoniacal odour; it does not effervesce with diluted muriatic acid.

Dubl. Ph. 1826.

℞ Rectified spirit	Oiij.
Carbonate of ammonia, coarsely powdered . .	℥iiiss.

Mix them, and dissolve the salt with a medium heat; then filter the liquor.

Spiritus ammoniaci caustici Dzondii. *Liquor ammonii caustici Dzondii. Dzond's caustic spirit of ammonia.*

Ph. Borussica, 1847.

℞ Lime recently prepared, powdered	℔v.
Hydrochlorate of ammonia, dry and powdered . . .	℔ij.
Rectified spirit (sp. gr. ·835)	℥iv.
Rectified spirit (sp. gr. ·828)	℔iv.

Mix the lime and hydrochlorate of ammonia as quickly as possible, and put them in a glass retort of such a size that it may be two-thirds full. Place the retort in a sand-bath, and fasten to its mouth, by means of a caoutchouc joint, a curved glass tube, which should extend to the bottom of an intermediate bottle, furnished with 3 apertures, and capable of holding 20 ounces of water. This bottle should be furnished with a straight tube, nearly reaching the bottom, and open at each end, and should be connected by means of a second tube with another bottle, capable of holding 8 pounds of water, so that the tube may touch the bottom of the bottle. In the first bottle put the spirit (sp. gr. ·835), and in the other the spirit (sp. gr. ·828). Make the joints perfectly tight, and with a heat gradually raised collect the gas, the last bottle being well refrigerated, and keep the product in glass bottles well-stopped.

Note.—It should be clear, colourless, of a very powerful odour, and have a sp. gr. ·808 to 810. 100 parts contain 10 of anhydrous ammonia.

The preparations according to the Edinburgh and Prussian Pharmacopœias differ from the other two, in being solutions of caustic ammonia.

Use and Dose.—The same as aromatic spirit of ammonia.

SYNONYMES.

Spiritus salis ammoniaci dulcis.—Lond. Ph. 1746.

Alcohol ammoniatum.—Edin. Ph. 1839.

Spiritus ammoniæ aromaticus. *Aromatic spirit of ammonia. Spirit of sal volatile.*

Lond. Ph. 1851.

℞ Hydrochlorate of ammonia .	℥vj.
Carbonate of potash . .	℥x.
Bruised cinnamon,	
Bruised clove, of each . .	ʒiiss.
The peel of lemon . . .	℥v.
Rectified spirit,	
Water, of each	Oiv.

Mix, and let 6 pints distil.

The specific gravity of this is ·918.

Edin. Ph. 1841.

℞ Spirit of ammonia . . .	f℥viij.
Volatile oil of lemon-peel .	fʒj.
Volatile oil of rosemary .	fʒiss.

Dissolve the oils in the spirit by agitation.

Dubl. Ph. 1850.

℞ Rectified spirit	Oiij.
Stronger solution of ammonia	f℥vj.
Oil of lemon	f℥ss.
Oil of nutmeg	fʒij.
Oil of cinnamon . . .	fʒss.

Dissolve the oils in the spirit, and add the solution of ammonia; mix with agitation and filter.

The specific gravity of this solution is ·852.

Remarks.—When made according to the formula of the London College, it becomes brown when kept for some time, and the flavour is not approved by some connoisseurs in this popular stimulant. The following formula yields a preparation which has been found to give more general satisfaction:—

Spirit of sal volatile.

℞ Sesquicarbonate of ammonia	℔j.
Rectified spirit	Oviss.
Oil of lemon	ʒij.
Oil of nutmeg	ʒss.
Oil of cinnamon	ʒj.
Water	Oxiij.

Mix in a glass retort, and distil Ox. Add to the distilled spirit ʒiss. liquor ammoniæ.

Med. Use. — An agreeable diffusible stimulant and restorative; frequently resorted to for lowness of spirits, and in cases of fainting.

Dose.—From 10 drops to a drachm taken in a glass of water.

SYNONYMES.

Spiritus salis volatilis oleosus.— Lond. Ph. 1721.

Spiritus volatilis aromaticus.—Lond. Ph. 1746.

Spiritus ammoniæ compositus.— Lond. Ph. 1788.

Spiritus ammoniæ fœtidus. *Fœtid spirit of ammonia.*

Lond. Ph. 1851.

℞ Hydrochlorate of ammonia	ʒx.
Carbonate of potash	ʒxvj.
Rectified spirit, Water	āā Oiij.
Assafœtida	ʒv.

Mix them; then with a slow fire let 3 pints distil.

The specific gravity of this is ·861.

Edin. Ph. 1841.

℞ Spirit of ammonia	fʒxss.
Assafœtida	ʒss.

Break the assafœtida into small fragments, digest it in the spirit for 12 hours, and distil over 10 fluidounces and a half by means of a vapour-bath heat.

Dubl. Ph. 1850.

℞ Assafœtida	ʒiss.
Rectified spirit	Oiss.
Stronger solution of ammonia	fʒiij.

Break the assafœtida into small pieces, and macerate it in the spirit for 24 hours; then distil off the entire of the spirit, and mix the product with the solution of ammonia.

The specific gravity of this preparation is ·849.

Med. Use. — Stimulant and antispasmodic.

Dose.—Half a drachm to a drachm.

SYNONYMES.

Spiritus volatilis fœtidus.—Lond. Ph. 1746.

Tinctura assafœtidiæ ammoniata.— Edin. Ph. 1839.

Spiritus angelicæ compositus. *Loco Spiritus theriacalis. Compound spirit of angelica.*

Ph. Borussica, 1847.

℞ Angelica root	℔j.
Lesser valerian root, Juniper berries	āā ʒiij.
Camphor	ʒiss.
Rectified spirit (sp. gr. ·897 to ·900)	℔vi.
Water	q. s.

Put the angelica, valerian, and juniper, previously sliced and bruised, into a still, and add the water and spirit. Macerate until the next day, and distil six pounds, in which dissolve the camphor, and strain.

Note.—It should be clear and colourless.

Spiritus anisi. *Spirit of anise.*

Lond. Ph. 1851.

℞ Oil of anise	fʒiij.
Proof spirit	Cj.

Dissolve.

SPIRITUS ANISI COMPOSITUS. *Compound spirit of aniseed.*

Dubl. Ph. 1826.

℞ Aniseeds, bruised,
Angelica seeds, bruised, āā ℔ss.
Proof spirit . . . . cong. j.
Water, enough to prevent empyreuma.

Macerate for twenty-four hours, and distil a gallon.

Med. Use.—Stomachic and carminative.

Dose.—℥ss. to ℥iv.

SYNONYME.

Crème d'Anise.

SPIRITUS ARMORACIÆ COMPOSITUS. *Compound spirit of horseradish.*

Lond. Ph. 1851.

℞ Horseradish, sliced,
Orange-peel dried . . āā ℥xx.
Nutmegs, bruised . . . ℥v.
Proof spirit . . . . cong. j.
Water . . . . . Oij.

Mix them; then, with a slow fire, let a gallon distil.

Dubl. Ph. 1826.

℞ Fresh horseradish root,
Dried orange-peel . . āā ℔j.
Nutmegs, bruised . . . ℥ss.
Proof spirit . . . . cong. j.
Water, sufficient to prevent empyreuma.

Macerate for twenty-four hours, and distil a gallon.

Omitted in Dubl. Ph. 1850.

Med. Use.—Stimulant.

Dose.—℥j. to ℥iv.

SYNONYMES.

Aqua raphani composita.—Lond. Ph. 1721.

Spiritus raphani compositus.—Lond. Ph. 1788, Dub. Ph. 1807.

SPIRITUS CAMPHORÆ. *Spirit of camphor.* Tinctura camphoræ, Ph. 1836.

Lond. Ph. 1851.

℞ Camphor . . . . . ℥v.
Rectified spirit . . . . Oij.

Dissolve.

SPIRITUS CARUI. *Spirit of caraway.*

Lond. Ph. 1851.

℞ Oil of caraway . . . f℥ij.
Proof spirit . . . . cong. j.

Dissolve.

Edin. Ph. 1841.

℞ Caraway, bruised. . . . ℔ss.
Proof spirit . . . . . Ovij.

Macerate for two days in a covered vessel; add a pint and half of water, and distil off seven pints.

Med. Use.—Carminative.

Dose.—℥j. to ℥iv.

SPIRITUS CASSIÆ. *Spirit of cassia.*

Edin. Ph. 1841.

℞ Cassia, in coarse powder . . ℔j.

Proceed as for the spirit of caraway.

Med. Use.—Cordial in langour and debility.

Dose.—f℥j. to f℥iv., in any proper vehicle.

SPIRITUS CINNAMOMI. *Spirit of cinnamon.*

Lond. Ph. 1851.

℞ Oil of cinnamon . . . f℥ij.
Proof spirit . . . . cong. j.

Dissolve.

Edin. Ph. 1841.

℞ Cinnamon, in coarse powder . ℔j.

Proceed as for the spirit of caraway.

Med. Use.—Stomachic.

Dose.—f℥j. to f℥iv.

SYNONYMES.

Aqua cinnamomi fortis.—Lond. Ph. 1721.

Aqua cinnamomi spirituosa.—Lond. Ph. 1746.

Spiritus cochleariæ. *Spirit of scurvy-grass.*

Ph. Borussica, 1847.

℞ Scurvy-grass, fresh, in flower ℔xij.
Rectified spirit (sp. gr. ·897 to ·900) . . . . . ℔vj.
Water . . . . . q. s.

Pour the water and spirit on the horse-radish, previously sliced, and distil six pounds.

Note.—It should be clear and colourless.

Spiritus formicarum. *Spirit of ants.*

Ph. Borussica, 1847.

℞ Ants, recently collected and clean . . . . . ℔ij.
Rectified spirit (sp. gr. ·897 to ·900)
Water . . . . . q. s.

Distil with a slow fire, four pounds.

Note.—It should be clear and colourless.

Codex, Medic. Hamberg. 1845.

℞ Ants, collected in July . . ℔ij.
Rectified spirit,
Water . . . . . āā ℔iv.

Distil until four pounds have passed over.

Note.—A clear sourish, colourless liquid, having a spirituous, and rather ethereal smell. Sp. gr. ·90.

Spiritus juniperi compositus. *Compound spirit of juniper.*

Lond. Ph. 1851.

℞ Oil of juniper . . . . fʒjss.
Oil of caraway,
Oil of fennel, of each. . . mxij.
Proof spirit . . . . . Oj.

Dissolve.

Edin. Ph. 1841.

℞ Juniper berries, bruised . . ℔j.
Fennel, bruised,
Caraway, bruised . . āā ʒiss.
Proof spirit . . . . . Ovij.
Water . . . . . Oij.

Macerate the fruits in the spirit for two days, add the water, and distil off seven pints.

Dubl. Ph. 1850.

℞ Juniper berries . . . . ℥viij.
Caraway seed, bruised,
Fennel seed, bruised, of each, ℥j.
Proof spirit . . . . . Css.
Water . . . . . Oj.

Macerate the berries and the seed in the spirit, for twenty-four hours; then add the water, and with a slow fire distil off half a gallon.

Med. Use.—A stimulating diuretic; a useful adjunct to other diuretics.

Dose.—ʒj. to ʒiv.

SYNONYME.

Aqua juniperi composita.—Lond. Ph. 1746.

Spiritus lavandulæ. *Spirit of lavender.*

Edin. Ph. 1841.

℞ Lavender, fresh . . . . ℔iiss.
Rectified spirit, . . . cong. j.

Mix them, and with the heat of a vapour-bath distil over seven pints.

Spiritus lavandulæ compositus. *Compound spirit of lavender.*

Edin. Ph. 1841.

℞ Spirit of lavender. . . . Oij.
Spirit of rosemary . . . fʒxij.
Cinnamon in coarse powder . ʒj.
Cloves, bruised . . . . ʒij.
Nutmeg, bruised . . . . ʒss.
Red sandal-wood, in shavings ʒiij.

Let the whole macerate for seven days, and then strain the liquor through calico.

Ordered in the London and Dublin

Pharmacopœias under the name of *Tinctura lavandulæ composita.*

Med. Use.—Stimulant and stomachic in languor and flatulency.

Dose.—ʒss. to ʒj.

SYNONYMES.

Lavender drops. Red lavender drops.

Spiritus menthæ piperitæ. *Spirit of peppermint.*

Lond. Ph. 1851.

℞ Oil of peppermint . . . fʒiij.
Proof spirit . . . . . cong. j.
Dissolve.

Edin. Ph. 1841.

℞ Peppermint, fresh . . . ℔iss.
Proceed as for the spirit of caraway.

Med. Use.—Stimulant and carminative.

Dose.—ʒj. to ʒij.

SYNONYME.

Aqua menthæ piperitidis spirituosa.—Lond. Ph. 1746.

Spiritus menthæ viridis. *Spirit of spearmint.*

Lond. Ph. 1851.

℞ Oil of spearmint . . . fʒiij.
Proof spirit . . . . cong. j.
Dissolve.

Med. Use.—The same as the preceding.

SYNONYMES.

Aqua menthæ vulgaris spirituosa.—Lond. Ph. 1746.

Spiritus menthæ sativæ.—Lond. Ph. 1788.

Spiritus myristicæ. *Spirit of nutmeg.*

Lond. Ph. 1851.

℞ Nutmegs, bruised . . . ʒiiss.
Proof spirit . . . . . cong. j.
Water . . . . . Oj.

Mix them; then with a slow fire let a gallon distil.

Edin. Ph. 1841.

The same as the London.

Med. Use.—Cordial and carminative.

Dose.—fʒj. to fʒiv.

SYNONYME.

Aqua nucis moschatæ.—Lond. Ph. 1746.

Spiritus nucis moschatæ.—Lond. Ph. 1788.

Spiritus pimentæ. *Spirit of pimento.*

Lond. Ph. 1851.

℞ Oil of pimento . . . . fʒij.
Proof spirit . . . . . cong. j.
Dissolve.

Edin. Ph. 1841.

℞ Pimento, bruised . . . . ℔ss.
Proceed as for the spirit of caraway.

Med. Use.—The same as the peppermint.

SYNONYME.

Spirit of allspice.

Spiritus pulegii. *Spirit of pennyroyal.*

Lond. Ph. 1851.

℞ Oil of pennyroyal . . . fʒiij.
Proof spirit . . . . . cong. j.
Dissolve.

Med. Uses and Dose.—The same as the spirit of peppermint.

SYNONYME.

Aqua pulegii spirituosa, Lond. Ph. 1746.

Spiritus rectificatus. *Rectified spirit.*

Lond. Ph. 1851.

The specific gravity of this is ·838. Destitute of colour; it is not made muddy on water being added; sulphuric acid being added, it is not tinged with a red colour. This spirit is able to be reduced to the form of weaker spirit, by adding three pints of distilled water to every five pints, at a heat of 62°.

Edin. Ph. 1841.

Density ·838 (56 over proof): fʒiv. treated with 25 minims of solution of nitrate of silver, exposed to bright light for 24 hours, and then passed through a filter purified by weak nitric acid, so as to separate the black powder which forms, undergo no further change when again exposed to light with more of the test.

Dubl. Ph. 1850. *Spiritus rectificatus. Rectified spirit.* Sp. gr. 840.

Spiritus fortior. *Stronger spirit.*

Dubl. Ph. 1850.

℞ Rectified spirit . . . Cong.ss.
Carbonate of potash, from pearl-ash . . . . . ʒviij.

Having dried the carbonate of potash at a low red heat, and rapidly reduced it to powder in a warm mortar, let it be shaken occasionally for four hours in a bottle with the spirit, maintaining the temperature of the mixture at or about 100°. After a subsidence of twenty minutes' duration, the liquid will form two distinct strata, the uppermost of which (measuring about 74 ounces) should be separated by decantation, or a syphon, and then distilled with the aid of a Liebig's condenser, and a chloride of zinc bath, until the product amounts to 72 ounces.

The specific gravity of this spirit is ·818.

Spiritus rosmarini. *Spirit of rosemary.*

Lond. Ph. 1851.

℞ Oil of rosemary. . . . fʒij.
Rectified spirit . . . . cong. j.

Dissolve.

Edin. Ph. 1841.

℞ Rosemary . . . . . ℔iiss.

Proceed as for the spirit of lavender.

Med. Use.—Employed as an adjunct to lotions and liniments.

Spiritus tenuior. *Proof spirit.*

Edin. Ph. 1841.

℞ Rectified spirit . . . . Oij.
Distilled water . . . . Oj.

Mix them. The density of the product should be ·912.

Note.—Density ·912 (7 over proof): tests, otherwise, as for rectified spirit.

Lond. Ph. 1851.

The specific gravity of this is ·920.

Dubl. Ph. 1850.

℞ Rectified spirit . . . Ovij.
Distilled water . . . Oiv.

Mix.

The specific gravity of proof spirit is ·920.

SYNONYME.

Alcohol dilutius.—Edin. Ph. 1839.

Spodium (from σποδος, a cinder).

The white ash resulting from calcination.

Spodium præparatum. *Spodium album.*

Ivory burnt until reduced to a white ash.

Spongia cerata. *Cerated sponge. Waxed sponge.*

Sponge, prepared by washing and drying, is dipped into melted wax, and then pressed between metallic plates slightly heated. It is used for *tents*.

Ph. Borussica, 1847.

℞ Marine sponge,
Yellow wax.

Select fine sponge, free from foreign matter, and dry, and immerse it completely in the wax previously melted; then press it strongly by means of a press made hot, and, when cold, remove from it the superfluous wax.

Spongia compressa. *Compressed sponge.*

Ph. Borussica, 1847.

Select fine marine sponge, free from foreign matter, and cut it into oblong pieces. Moisten them with warm water, and tie them closely and tightly together with cords, so that each piece may form a cylinder about the length of the finger, and keep them so tied.

Spongia usta. *Burnt sponge.*

Cut sponge, which has not been previously washed, into small pieces, beat them, to separate the sand, dust, and impurities, then put them into an iron vessel similar to a coffee-roaster, with only a small aperture for the escape of gases, and heat it over a gentle fire until the sponge is reduced to a brown friable mass. Reduce this to powder.

Med. Use.—It has been employed as a resolvent in bronchocele, scrofulous enlargement of the lymphatic glands, &c.

Dose.—ʒj to ʒiij.

Stones, five precious.

Garnet, hyacinth, sapphire, cornelian, emerald.

These were formerly accounted cordial!

Stannum. *Tin. Symb.* Sn. *Equiv.* 58.

A white, malleable, and slightly ductile metal.

Sp. gr. 7·3. It melts at 442° Fahr.

Edin. Ph. 1841.

When finely granulated, 100 grains are entirely converted into a white powder by fʒiij. of nitric acid (D. 1·380); and distilled water, boiled with this powder and filtered, is colourless, and precipitates but faintly, or not at all, with solution of sulphate of magnesia.

Stanni chloridum. *Chloride of tin. Protochloride of tin.*

Add hydrochloric acid to powdered tin and boil the mixture, keeping excess of tin always present; afterwards dilute it with water, and keep it in a bottle with some powdered tin at the bottom.

Stanni bichloridum. *Bichloride of tin.*

No. 1.

Libavius's fuming liquor.

N Powdered tin . . .	1 part.
Corrosive sublimate . .	3 parts.

Mix, and heat the mixture in a glass retort, until a fuming, colourless liquid passes into the receiver.

No. 2.

Dyers' spirit.

This is made by dissolving powdered tin in hydrochloric acid, with the addition of a portion of nitric acid. Several kinds of dyers' spirit are made, which differ according to the proportion of nitric acid and the degree of heat employed.

Stanni pulvis. *Powder of tin.*

Edin. Ph. 1841.

Melt tin in an iron vessel; pour it into an earthenware mortar heated a little above the melting point of the metal; triturate briskly as the metal cools, ceasing as soon as a considerable proportion is pulverized; sift the product, and repeat the process with what remains in the sieve.

Dubl. Ph. 1850.

Take of grain tin a convenient quantity; melt the tin in a black-lead crucible, and, while it is cooling, stir it with a rod of iron until it is reduced to powder. Let the finer particles be separated by means of a sieve, and when, after having been several times in succession shaken with distilled water, the decanted liquor appears quite clear, let the product be dried and preserved for use.

SYNONYME.

Granulated tin.

Stanni oxidum. *Oxide of tin.*

Soubeiran's Trait. Pharm. 1847.

The tin is put into an iron ladle, or, in case of acting on large masses, into a cast-metal pot; it is fused and left on the fire; it soon absorbs the oxygen of the air, and becomes covered with a grey scoria, which is protoxide. As the oxide is formed, it is drawn aside by means of an iron spatula, and the process is continued until all the tin becomes converted into oxide; this is left on the fire for some time longer, to complete the oxidation of those portions of the metal which may have remained mixed up with it.

Stibium sulphuratum aurantiacum. *Antimonii sulphur auratum. Golden sulphuret of antimony.*

Ph. Borussica, 1847.

℞ Crude carbonate of soda .	℔iij.
Lime, recently prepared .	℔j.
Black sulphuret of antimony, levigated. . .	℔ij.
Sublimed sulphur . . .	℥iv.
Crude sulphuric acid (sp. gr. 1·845)	℥ivss.
Water	q. s.

Dissolve the carbonate of soda in 15 pounds of the water in an iron vessel, and mix in, with constant agitation, the lime, previously moistened with 3 pounds of water, the antimony, and the sulphur. Boil for an hour and a-half, or until the grey colour has entirely disappeared, supplying water occasionally to prevent loss by evaporation, and strain. Again boil the residue with about 6 pounds of water, filter, and well wash it with warm water. Crystallize the mixed solutions, and wash the crystals with distilled water to which about a twentieth part of solution of caustic soda has been added. Dry the crystals in the air, dissolve 1 pound of them in 5 pounds of water, filter, and dilute the solution with 25 pounds of water, and add gradually, with agitation, the sulphuric acid, previously diluted with 8 pounds of water cooled and filtered. Collect the precipitate on a filter, and wash it perfectly, first with common and lastly with distilled water. Then press it between bibulous paper, dry it in a warm (77° Fahr.) dark place, and when powdered keep it in well-stopped bottles from the access of light.

Note.—It should be a very fine powder, of an orange colour, and inodorous.

Strychnia. *Strychnia.*

Lond. Ph. 1851.

Note.—It is dissolved in hot rectified spirit. It melts by fire, and if the heat be increased, it is consumed. It tastes very bitter. This being endowed with violent properties is to be employed very cautiously.

Edin. Ph. 1841.

℞ Nux vomica	℔j.
Quicklime	℥iss.
Rectified spirit . . .	q. s.

Subject the nux vomica for 2 hours to the vapour of steam, chop or slice it, dry it thoroughly in the vapour-bath, or hot-air press, and immediately grind it in a coffee-mill. Macerate it for 12 hours in 2 pints of water, and boil it; strain through linen or calico, and squeeze the residuum; repeat the maceration and decoction twice with a pint and a-half of water. Concentrate the decoctions to the consistence of thin syrup; add the lime in the form of milk of lime; dry the precipitate in the vapour-bath; pulverize it, and boil it with successive portions of rectified spirit till the spirit ceases to acquire a bitter taste. Distil off the spirit till the residuum be sufficiently concentrated to crystallize on cooling. Purify the crystals by repeated crystallizations.

Note.—Intensely bitter; nitric acid strongly reddens it; a solution of 10 grains in 4 fluidounces of water by means of a fluiddrachm of pyroligneous acid, when decomposed by 1 fluidounce of concentrated solution of carbonate of soda yields on brisk agitation a coherent mass weighing

when dry 10 grains, and entirely soluble in solution of oxalic acid.

Dubl. Ph. 1850.

℞ Nux vomica, in powder . ℔j.
Water . . . . . Cong.iss.
Oil of vitriol of commerce. f℥ss.
Slacked lime . . . . ℥j.
Rectified spirit . . . Oij.
Dilute sulphuric acid,
Solution of ammonia,
Of each a sufficient quantity.
Prepared animal charcoal . ℥ss.

Macerate the nux vomica for 24 hours with half-a-gallon of the water, acidulated with 2 drachms of the acid, and, having boiled for half-an-hour, decant. Boil the residuum with a second half-gallon of the water, acidulated with 1 drachm of the acid; decant, and repeat this process with the remaining water and acid, the undissolved matter being finally submitted to strong expression. The decanted and expressed liquors having been passed through a filter, and then evaporated to the consistence of a syrup, let this be boiled with the rectified spirit for 20 minutes, the lime being added in successive portions during the ebullition, until the solution becomes decidedly alkaline. Filter through paper, and having drawn off by distillation the whole of the spirit, let the residuum be dissolved in the dilute sulphuric acid, and to the resulting liquid, after having been cleared by filtration, add the solution of ammonia in slight excess, and let the precipitate that forms be collected on a paper filter, dried, and then dissolved in a minimum of boiling rectified spirit. Into this solution introduce the animal charcoal, digest for 30 minutes, then filter, and allow the residual liquor to cool, when the strychnia will separate in crystals.

Med. Use.—It is a virulent poison; has been given in paralysis of the lower extremities.

Dose.—One-twelfth to one-eighth of a grain.

SYNONYME.

Vauquelina. Tetanine.

Strychniæ murias. *Muriate of strychnia.*

Dubl. Ph. 1850.

℞ Strychnia . . . . . ℥j.
Dilute muriatic acid . . f℥j.
Or a sufficient quantity.
Distilled water . . . ℥iiss.

Pour the acid upon the strychnia, and, adding the water, apply heat until a perfect solution is obtained. Let this cool, and let the crystals which form be dried on bibulous paper. By evaporating the residual liquid to one-third of its bulk, and then allowing it to cool, an additional quantity of the salt will be obtained.

Storm glass.

This name is applied to a glass tube about 12 inches long and three-fourths of an inch in diameter, nearly filled with one of the following solutions:—

No. 1.

℞ Camphor . . . . . ʒij.
Nitrate of potash . . . ʒiss.
Salammoniac . . . . ʒij.
Proof spirit . . . . ℥ij.
Mix.

No. 2.

℞ Camphor . . . ʒiiss.
Nitrate of potash . gr. xxxviij.
Salammoniac . . gr. xxxviij.
Rectified spirit. . ʒxj.
Water . . . . ʒxj.
Mix.

The following indications *are said* to be afforded by the storm glass:—

1. If the solution be very clear, with only a small quantity of crystalline matter at the bottom of the glass, fine dry weather may be expected.

2. The formation of fresh crystals, extending upwards through the glass while the liquid still continues clear, indicates a change of weather with rain.

3. The formation of plumose crystals, some of which float in the upper part of the liquid, while the liquid itself assumes a turbid appearance, indicates the approach of a storm with high wind.

SUCCINUM. *Amber. Carabe* or *Karabe. Electrum.*

A resinous-looking substance, supposed to be of vegetable origin, which is principally found on the shores of the Baltic and some of its tributary rivers. It has a yellowish colour, and is generally more or less transparent. It is made into necklaces and other ornaments, and the inferior kinds distilled for an oil (*oleum succini*), and an acid (*acidum succinicum*) which it yields.

SUCCI EXPRESSI. *Expressed juices. Preserved juices.*

Under this name a class of preparations have been introduced into this country by Mr. Squire. They are made by expressing the juices from plants, at the period of their growth when they possess the greatest amount of medicinal activity, mixing these juices with half their volume of rectified spirit, allowing the mixture to stand for a short time, and then filtering. In this manner the following are made:—

Succus absinthii. Preserved juice of wormwood.

From the fresh herb during the period of inflorescence.

Succus aconiti. Preserved juice of aconite.

From the leaves of the fresh herb during the period of inflorescence.

Succus conii. Preserved juice of hemlock.

From the leaves of the fresh herb during the period of inflorescence.

Succus digitalis. Preserved juice of foxglove.

From the leaves of the fresh herb during the period of inflorescence.

Succus hyoscyami. Preserved juice of henbane.

From the leaves of the fresh herb during the period of inflorescence.

Succus lactucæ. Preserved juice of lettuce.

From the leaves of the fresh herb during the period of inflorescence.

Succus taraxaci. Preserved juice of dandelion.

From the roots dug up in the months of September, October, or November.

Other *Preserved juices* may be made in a similar manner.

SUCCUS GLYCYRRHIZÆ. *Liquorice. Spanish liquorice. Spanish juice. Italian juice.*

The impure inspissated juice of the liquorice root (*Glycyrrhiza echinata*, and probably some other species) is sold under the above names. It is principally manufactured in Spain and Italy, from whence it is brought to this country in small rolls or cylinders, with the name of the maker stamped at one end. That having the name of "Solazzi" stamped on it is considered the best. It is but partially soluble in water.

SUCCUS DAUCI INSPISSATUS *Inspissated juice of carrot.* Ph. Boruss. 1813.

Boil in a tin vessel, till they begin to soften, the fresh roots of the carrot (Daucus sativus), after being well cleansed and sliced, having first covered them about one-half with water. Express the juice, which is to be cleared by giving it one boil, and evaporate it by a gentle heat to the consistence of honey.

SULPHUR. *Brimstone. Symb.* S. *equiv.* 16.

Sulphur is met with in an uncombined

state in the earth, in great abundance in some districts, as in Sicily, from whence most of that used in this country is brought. It also occurs, more generally distributed in combination with other elements.

Native sulphur is deprived of some of its impurities, either by melting and straining it, or by subliming it in small pots. The product is called *Crude sulphur*.

Sublimed sulphur, or *Flowers of sulphur*, is the product of the sublimation of crude sulphur, on the large scale, the vapour being conducted into a capacious chamber, in which it condenses in small crystalline particles.

Edin. Ph. 1841. *Sulphur sublimatum.*

Sublime sulphur in a proper vessel; wash the powder thus obtained with boiling water in successive portions till the water ceases to have an acid taste; then dry the sulphur with a gentle heat.

Note.—It is entirely sublimed by heat; and distilled water agitated with it does not affect litmus-paper. When nitric acid is heated with it, the solution, diluted with water, neutralized with carbonate of soda, and acidulated with muriatic acid, does not give a yellow precipitate with sulphuretted hydrogen.

Lond. Ph. 1851. *Sulphur.*

With a citron colour, it is sublimed by a heat of 600°. It is dissolved by the aid of fire in oil of turpentine.

Dubl. Ph. 1850.

Sulphur sublimatum. Sublimed sulphur.

Dubl. Ph. 1826. *Sulphur lotum.*

Pour hot water on to sublimed sulphur, and repeat the washing as long as effused water appears contaminated with acid. This is discovered by means of litmus. Dry the sulphur on bibulous paper.

Roll sulphur. Stick sulphur. Sulphur rotundum.

Sulphur purified by distillation, and cast in moulds while in the fluid state.

Sulphur vivum. Sulphur nigrum. Black sulphur.

Impure native sulphur was formerly brought from Sicily under these names. It is a grey or mouse-coloured powder.

The residue left in the subliming pot after purifying sulphur by sublimation is said to be now substituted for it. It frequently contains arsenic.

SYNONYMES.

Horse brimstone. Sulphur caballinum. Sulphur griseum.

Sulphur præcipitatum. Precipitated sulphur.

Lond. Ph. 1851.

Sulphur precipitated from sulphuret of calcium by hydrochloric acid.

Pale yellow. Water in which it is boiled does not change the colour of litmus into red. It corresponds to sulphur as regards the other tests above noted.

U. S. Ph. 1850.

℞ Sulphur (sublimed) . ℔j.
Lime . . . . . ℔iss.
Water . . . . . 2 gallons.
Muriatic acid, a sufficient quantity.

Slake the lime with a small quantity of the water, and having mixed it with the sulphur, add the remainder of the water; boil for two or three hours, occasionally adding water, so as to preserve the measure, and filter. Dilute the filtered liquor with an equal bulk of water; then drop into it sufficient muriatic acid to precipitate the sulphur. Lastly, wash the precipitate repeatedly with water till the washings are tasteless, and dry it.

Ph. Borussica, 1847.

Sulphur præcipitatum. Lac sulphuris. Precipitated sulphur.

℞ Lime recently prepared .	℔j.
Sublimed sulphur . .	℔ij.
Hydrochloric acid (sp. gr. 1·120). . . .	℔iij. ʒiv.
Water	q. s.

Mix the lime with 6 pounds of water in an iron vessel, and add to it the sulphur with 24 pounds of water. Boil them for an hour with continual agitation, supplying the water lost by evaporation, and strain through a linen bag. Boil the residue again for half an hour with 15 pounds of water, filter, and wash what remains with warm water. Set aside the mixed liquors for some days in well-stopped vessels, then filter, and dilute the solution with water that it may weigh 40 pounds; put this in a proper vessel, and add gradually, with agitation, 3 pounds of the hydrochloric acid diluted with 6 pounds of water, or as much of this mixture as may be required, so that, when added to a small quantity of the filtered solution, it may cause only a slight turbidity. Put the precipitate thus obtained in a bag, well wash it with water, and then take it out, and put it in a mixture of the remaining acid (ʒiv.) with 4 pounds of water. Let it stand for some hours, with frequent agitation, then return it to the bag, and wash it first with common, and then with distilled water; dry it in a warm place, (77° to 65° Fahr.,) reduce it to powder, and keep it in well-stopped vessels.

Note.—It should be a very fine, pale-yellow powder, inodorous, and should perfectly volatilize in the fire.

SYNONYME.

Milk of Sulphur.

Sulphuris hypochloridum. *Sulphuris hypochloritis. Sulphuris chloridum. Chloride, Hypochloride,* or *Hypochlorite of sulphur.*

Under these names a compound is used in medicine, which is prepared by placing sublimed sulphur on a shallow dish, in a suitable apparatus, and passing chlorine gas slowly over it, until the gas ceases to be absorbed. The product is probably *Chloride of sulphur* (which is an orange-yellow liquid) mixed with sulphur.

Med. Use.—Internally, in gouty affections and nervous fever. Externally, in *psoriasis inveterata.*

Sulphuris iodidum. *Iodide of sulphur.*

Lond. Ph. 1851.

℞ Sulphur	ʒj.
Iodine	ʒiv.

Put the sulphur into a glass vessel, and place the iodine upon it. Hold the vessel immersed in boiling water, until they shall have united. Then, when the iodide has cooled, break it into pieces; the vessel being broken, and preserve in another well-closed vessel.

About 20 grains of sulphur remain from 100 grains of this carefully boiled in water.

Dubl. Ph. 1850. *Sulphur iodatum.*

℞ Pure iodine, in powder . .	ʒj.
Sublimed sulphur	ʒij.

Mix the iodine and sulphur by trituration in a mortar, and, having transferred the powder to a Florence flask, heat it gently till fusion is effected. When the flask has cooled, let it be broken, in order to the withdrawal of the product, which should be immediately enclosed, and preserved in a well-stopped bottle.

U. S. Ph. 1850.

℞ Iodine	ʒiv.
Sulphur	ʒj.

Rub the iodine and sulphur together in a

glass, porcelain, or marble mortar, until they are thoroughly mixed. Put the mixture into a matrass, close the orifice loosely, and apply a gentle heat so as to darken the mass without melting it. When the colour has become uniformly dark throughout, increase the heat so as to melt the iodide; then incline the matrass in different directions in order to return into the mass any portions of iodine which may have been condensed on the inner surface of the vessel; lastly, allow the matrass to cool, break it and put the iodide into bottles, which are to be well-stopped.

Sumbul root. *Sambul, Sumbul, Musk root, Racine de Sambula ou Sumbula,* (Guibourt.) *Moschus wurzel.* (The Germans.) Central Asia, probably.

The origin of this plant is at present unknown: its habitat is also involved in obscurity. It is supposed to be an umbelliferous plant, from its resemblance to angelica. It was first introduced from Russia into Germany; a second variety has been imported into England from Bombay.

Dr. Pereira thus describes the root of the two varieties.

Russian, (*Radix Sumbul Muscoviti,*) occurs in nearly circular pieces, formed by the transverse section of a large root: these pieces which have a dirty, somewhat worn appearance, are from about $2\frac{1}{2}$ to 5 inches in diameter and from $\frac{3}{4}$ to $1\frac{1}{2}$ inches in thickness at the edge, whic owing to unequal contraction in drying, is thicker than the central portion. On the outer edge they are covered with a dusky brown, rough bark, frequently beset with short bristly fibres; the interior consists of a spongy, coarsely-fibrous, dry, yellowish-white mass, of a somewhat farinaceous appearance. Some pieces, constituting the crown portion of the root, are covered with a papery bark. The root has a pure musky odour. Its taste is rather bitter, and very slightly acrid.

Indian, (*Chinese Sumbul root?*) *Radix Sumbul Indici,* is of closer texture, firmer, denser, and of a more reddish tint, bearing some slight resemblance to inferior rhubarb.

Sumbul root is an antispasmodic, and is administered in the form of powder, alcoholic and ethereal tinctures.

Suppositorium.

A medicine to be administered by the rectum, usually of the consistence of a pill-mass or ointment, and made into a conical or cylindrical form.

Suppositoria. *Suppositories.*

Codex, Medic. Hamberg. 1845.

℞ Aloes	℥vj.
Common salt	ʒiss.
Soap, Spanish	ʒiss.
Starch	ʒviij.

Mix, and make into a mass with honey, and then form it into little cones of the required size.

Syrupus. *Syrup.*

Lond. Ph. 1851.

℞ Sugar	℔iij.
Distilled water	Oj.

Dissolve with a gentle heat.

Edin. Ph. 1841. *Syrupus simplex.*

℞ Sugar	℔x.
Water	Oiij.

Dissolve the sugar in the water with a gentle heat.

Dubl. Ph. 1850. *Syrupus simplex.*

℞ Refined sugar, in powder	℔v.
Distilled water	Oij.

Dissolve the sugar in the water, with the aid of a steam or water heat.

The specific gravity of this syrup is 1330.

Syrupus absinthii. *Sirop d'absinthe. Syrup of wormwood.*

Codex, Ph. Franç. 1839.

℞ Tops of wormwood, dried . . . . ℥viij.
Boiling water . . ℔v. ℥ijss.
White sugar . . q. s. (℔x. ℥v.)

Cut the wormwood, and pour on it the boiling water; infuse for 12 hours, press out and strain the liquor, add to it twice its weight of sugar, and make the syrup in a close vessel with the heat of a water-bath.

Syrupus aceti. *Syrup of vinegar.*

Edin. Ph. 1841.

℞ Vinegar, French in preference . . . . . f℥xj.
Pure sugar . . . . . ℥xiv.

Boil them together.

Use.—This is good for sweetening barley-water or gruels, in inflammatory diseases.

Dose.—℥ij. to ℥j.

Syrupus acidi citrici. *Syrup of citric acid.*

Dubl. Ph. 1850.

℞ Citric acid, in powder,
Distilled water, of each . ℥iiss.
Tincture of lemon peel . . f℥v.
Simple syrup . . . . Oiij.

Dissolve the acid in the water with the aid of heat; then add the solution and tincture of lemon peel to the syrup, and mix with agitation.

Syrupus acidi hydrocyanici. *Sirop d'acide hydrocyanique. Syrup of hydrocyanic acid.*

Codex, Ph. Franç. 1839.

℞ Syrup . . . . . ℥j. ℈j.
Diluted hydrocyanic acid, (containing 10·5 per cent. by weight of real acid.) gr. iv.

Mix them very carefully, and keep the syrup in well-stopped bottles.

Syrupus acidi tartarici. *Sirop d'acide tartarique. Syrup of tartaric acid.*

Codex, Ph. Franç. 1839.

℞ Tartaric acid. . . . ℥j.
Distilled water . . . ℥ij.
Syrup . . . . . ℥vj. ℥ij.

Dissolve the acid in the water, and add the solution to the boiling syrup.

Syrupus adianthi. *Syrup of maiden-hair. Capillaire.*

Codex, Ph. Franç. 1839.

℞ Canadian maiden-hair (Adianthum pedatum) 192 parts.
Boiling water . . . 1500 „
White sugar . . . . 2000 „

Infuse two-thirds of the maiden-hair in the water, strain, dissolve the sugar in the infusion, clarify it with white of egg, pour it over the remainder of the maiden-hair placed in a water-bath, digest them for 2 hours, and then strain the syrup.

Ph. Badensia. 1841.

Syrupus capillorum veneris.

℞ Maiden-hair, cut . . . . ℥iij.
Boiling water . . . . ℔iij.
Sugar . . . . . ℔v.
Whites of 2 eggs,
Orange-flower water . . . ℥j.

Infuse the maiden-hair in the water, then dissolve the sugar in ℔iij. of the infusion, and clarify with the whites of eggs, Lastly, add the orange-flower water.

Note.—Clarified syrup flavoured with orange-flower water is frequently sold for *capillaire*.

Syrupus ætheris sulphurici. *Syrup d'ether. Syrup of ether.*

Codex, Ph. Franç. 1839.

℞ Syrup . . . . . ℥j. ℈j.
Sulphuric ether . . . gr. xxxij.

Put the syrup in a stoppered bottle, having a glass tap at the bottom; add the ether, and agitate the mixture frequently for 5 or 6 days, then set it by in a cool place; separate the clear syrup by means of the tap, and preserve it in small well-stoppered bottles.

Syrupus allii. *Syrup of garlic.*

℞ Fresh garlic, sliced . . . ℥vj.
Distilled vinegar . . . . Oj.
Sugar (refined) . . . . ℔ij.

Macerate the garlic in the vinegar in a glass vessel for 4 days, then express the liquor, and set it aside that the dregs may subside: lastly, add the sugar, and strain the syrup while hot.

Med Use.—An excellent remedy in ascarides.

Dose.—℥ij. to ℥vj.

Syrupus althææ. *Syrup of marshmallow.*

Lond. Ph. 1851.

℞ Sliced marshmallow . . ℥iss.
Sugar . . . . . ℔iij.
or as much as may be sufficient.
Distilled water . . . . Oj.
Rectified spirit . . . . f℥iiss.
or as much as may be sufficient.

Macerate the marshmallow in the water for 12 hours. Press out the liquor, and strain through linen. Then add a weight of the strained liquor, to more than double its weight of sugar, and dissolve with a gentle heat. Lastly, when the syrup shall have cooled, add half a fluiddrachm of the spirit to each fluidounce.

Edin. Ph. 1841.

℞ Althæa root, fresh and sliced ℥viij.
Boiling water . . . . Oiv.
Pure sugar . . . . . ℔iiss.

Boil the althæa root with the water down to two pints; strain, and express strongly through calico; let the impurities subside; and dissolve the sugar in the clear liquor with the aid of heat.

Med. Use.—Demulcent.
Dose.—℥j. to ℥iv.

Syrupus de ammoniaco. *Syrup of ammoniacum.*

Ph. Hannov. Nova, 1831.

℞ Powdered gum ammoniacum ℥ij.
White French wine . . . ℥x.
Dissolve; then add,
Sugar, boiled to a tabular consistence . . . . . ℥xvj.
Mix, to form a syrup.

Syrupus amygdalæ. *Sirop d'orgeat. Orgeat. Syrup of almonds.*

Codex., Ph. Franç. 1839.

℞ Sweet almonds . . . 500 parts.
Bitter almonds . . . 160 „
White sugar . . . 3000 „
Water . . . . . 1625 „
Orange-flower water . 250 „

Blanch the almonds, beat them into a paste with some of the water and sugar, mix this paste with the rest of the water, strain and press; dissolve the remainder of the sugar in the emulsion with the heat of a water-bath; then add the orange-flower water, and strain the syrup.

Ph. Badensia, 1841.

℞ Sweet almonds . . . . ℥viij.
Bitter almonds . . . . ℥ij.
Distilled water . . . ℥xviij.
Orange-flower water . . ℥ij.
White sugar . . . . ℔iij.

The almonds are to be well washed, and pounded in a stone mortar with a wooden pestle, and the distilled water added by degrees; then pressed, strained through flannel, and the sugar dissolved in ℥xviij. of the strained liquor at a temperature but little above 60°. Lastly, add the orange-flower water.

Whitish.

Syrupus cum succo aspara-

GORUM. *Syrop de pointes d'asperges. Syrup of asparagus.*

Codex, Ph. Franç. 1839.

℞ Purified juice of the tops of asparagus . . . . . ℔j.
White sugar . . . . . ℔ij.

Dissolve the sugar in the juice with the heat of a water-bath, and strain.

SYRUPUS AURANTII. *Syrup of orange peel.*

Lond. Ph. 1851.

℞ Peel of orange, dried . . ℥iiss.
Boiling distilled water . . Oj.
Sugar . . . . . ℔iij.,
or as much as may be sufficient.
Rectified spirit . . . . f℥iiss.,
or as much as may be sufficient.

Macerate the peel in the water for 12 hours, in a closed vessel. Press out the liquor, and boil for the sixth part of an hour. Then strain, and finish in the same manner as is directed concerning the syrup of marshmallow.

Edin. Ph. 1841.

℞ Fresh bitter orange peel . ℥iiss.
Boiling water . . . . Oj.
Pure sugar . . . . . ℔iij.

Infuse the peel in the water for 12 hours in a covered vessel, pour off the liquor, and filter it, if necessary; add the sugar to the liquor, and dissolve it with the aid of heat.

Dubl. Ph. 1850.

℞ Bitter orange peel, dried . ℥iiss.
Boiling distilled water . . Oj.
Refined sugar, in powder, as much as may be sufficient.

Infuse the orange peel in the water, in a covered vessel, for 12 hours, and strain without expression; then add to the liquor twice its weight of sugar, and dissolve with the aid of a steam or water heat.

Med. Use.—As an adjunct to stomachic mixtures.

Dose.—℥j to ʒiij.

SYNONYME.

Syrupus e corticibus aurantiorum.—Lond. Ph. 1746.

SYRUPUS FLORUM AURANTII. *Syrupus florum naphæ. Syrup of orange-flower.*

Ph. Borussica, 1847.

℞ Orange-flower water . . ℥x.
Refined sugar . . . . ℔iss.

Dissolve the sugar in the water, and with one ebullition make a colourless syrup.

SYRUPUS AURANTIORUM. *Sirop d'oranges. Syrup of oranges.*

Codex, Ph. Franç. 1839.

℞ Purified juice of oranges ℥xv. ʒv.
White sugar . . . ℔ij. ℥v. ʒiij.

Dissolve the sugar in the juice with a gentle heat, in a glass or silver vessel, and strain.

Note.—It is usual to flavour this syrup with the tincture of the fresh rinds of the oranges.

SYRUPUS BALSAMI PERUVIANI. *Syrupus balsamicus. Syrup of balsam of Peru.*

Ph. Borussica, 1847.

℞ Balsam of Peru . . . ℥j.
Warm water . . . . ℔j.
Refined sugar . . . . ℔iss.

Digest the balsam in the water in a close vessel for some hours, and when cold dissolve the sugar in ten ounces of the filtered liquor, and make a syrup with one ebullition.

Note.—It should be of a slightly-yellow colour.

SYRUPUS CARYOPHYLLI RUBRI. *Syrup of red clove pink.*

Lond. Ph. 1788.

℞ Petals of the real clove pink (Dianthus caryophyllus) . . . . ℔ij.
Boiling distilled water . Oiv. f℥xvj.

Macerate for 12 hours in a glass vessel; strain, and in the strained liquor dissolve enough purified sugar to form a syrup.

Syrupus cerasorum. *Syrup of cherries.*

Ph. Borussica, 1847.

℞ Unripe cherries fresh . . . quantum placet.
Refined sugar . . „ „

Bruise the cherries with the kernels, and let them stand 3 days, then press out the juice, and set it by until it appears clear, and fermentation has ceased. Dissolve in 20 ounces of this strained juice 3 pounds of refined sugar, and make a syrup at one ebullition.

Note.—It should be of a black-purple colour.

Codex, Medic. Hamberg. 1845.

Pound ripe sour cherries together with the stones, in a mortar, let them stand for 3 days, then press, and slightly boil the juice, and, when cold, filter.

℞ Of the above juice . . ℥xx.
Sugar . . . . . ℔iij.

Make it into a syrup by boiling, strain it through flannel, and keep it in a cool place in small bottles.

Syrupus chamomillæ. *Syrup of chamomiles.*

Ph. Hannov. Nova. 1831.

℞ Chamomile flowers . . ℥viij.
Hot distilled water . . ℔iij.
Sugar . . . . . ℔iv.

Infuse the chamomiles in the water, then strain, and dissolve the sugar in ℥xxviij of the liquor.

Syrupus cinchonæ. *Sirop de quinquina. Syrup of cinchona bark.*

Codex. Ph. Franç. 1839.

℞ Crown or Loxa bark (Cinchona condaminea) . ℔j.
Water . . . . . ℔x. ℥v.
White sugar . . . . ℔v. ℥iiss.

Boil the bark in the water for half-an-hour in a covered vessel, and strain. Evaporate the still turbid solution until reduced one-half, add the sugar; evaporate to the consistence of syrup, and, when cold, filter through paper.

Syrupus cinchonæ vino paratus. *Sirop de quinquina au vin. Syrup of cinchona bark, prepared with wine.*

Codex, Ph. Franç. 1839.

℞ Soft extract of cinchona bark (Cinchona condaminea). . . . . ℥iiiss.
French white wine (vin de Lunel) . . . . ℔v. ℥iiss.
White sugar. . . ℔vij. ℥ix. ʒvj.

Dissolve the extract in the wine, filter the solution, add to it the sugar, and dissolve it in a close vessel.

Note.—One ounce of this syrup contains about 10 grains of the extract.

Syrupus cinnamomi. *Syrup of cinnamon.*

Ph. Borussica, 1847.

℞ Cinnamon, coarsely powdered. ℥ij.
Spirituous cinnamon water . ℔j.
Rose water . . . . . ℥ij.
Refined sugar . . . . . ℔iss.

Digest the cassia with the cinnamon and rose waters for 2 days in a close vessel, filter, and dissolve the sugar, with a gentle heat, in 11 ounces of the strained liquor, and with one ebullition make a syrup of a reddish-brown colour.

Syrupus cinnamomi acuti. Syrup of cinnamon.

Ph. Hannov. Nova, 1831.

℞ Powdered cinnamon . . ℥ij.
Spirituous cinnamon water (Aqua cinnamomi vinosa*) . . . . . ℥xiv.
Sugar . . . . . ℔iss.

Macerate the two first ingredients in a close vessel for 3 days, press and strain the liquor, and in ℥ix of this dissolve the sugar.

Syrupus cocci. *Syrup of cochineal.*

Lond. Ph. 1851.

℞ Bruised cochineal . . . ℈iv.
Boiling distilled water . . Oj.
Sugar . . . . . ℔iij.,
or as much as may be sufficient,
Rectified spirit . . . . f℥iiss.,
or as much as may be sufficient.

Boil the cochineal in the water for the fourth part of an hour in a closed vessel, frequently stirring; then strain, and finish as it is directed concerning the syrup of marshmallow.

Syrupus croci. *Syrup of saffron.*

Lond. Ph, 1851.

℞ Saffron . . . . . ʒv.
Boiling distilled water . . Oj.
Sugar . . . . . ℔iij.,
or as much as may be sufficient,
Rectified spirit . . . . f℥iiss.,
or as much as may be sufficient.

Macerate the saffron in the water for 12 hours in a closed vessel; then strain the liquor, and finish as it is directed concerning the syrup of marshmallow.

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* Aqua cinnamomi vinosa. *Spirituous cinnamon water.*

Ph. Hannov. Nova, 1831.

℞ Cinnamon bark. . . . ℔j.
Rectified spirit . . . . ℔ij.
Water . . . . . q. s.
Distil ℔ix.

Edin. Ph. 1841.

℞ Saffron . . . . . ʒx.
Water, boiling . . . . Oj.
Sugar . . . . . ℔iij.

Macerate the saffron in the water for 12 hours in a vessel lightly covered, then strain the liquor, and add the sugar to it.

Dubl. Ph. 1850.

℞ Saffron, chopped fine . . ℥ss.
Boiling distilled water . . Oj.
Refined sugar, in powder, as much as may be sufficient.

Infuse the saffron in the water in a covered vessel, for 12 hours; then boil for 5 minutes, and strain through calico with expression; let the decoction stand until the sediment subsides, and having then decanted the clear liquor, add to it twice its weight of sugar, and dissolve with the aid of a steam or water heat.

Ph. Borussica, 1847.

℞ Saffron . . . . . ℥ss.
French white wine . . . ℔j.
Refined sugar . . . . ℔iss.

Macerate the saffron in the wine until the next day, and then dissolve the sugar in 11 ounces of the pressed and strained liquor, and with one ebullition make a syrup of a brownish-yellow colour.

Syrupus croci vino paratus. Sirop de safran. Syrup of saffron.

Codex, Ph. Franç. 1839.

℞ Saffron. . . . . ℥iv.
Malaga wine . . . ℔v. ℥ij. ʒiv.
White sugar . . ℔vij. ℥ix. ʒvj.

Cut the saffron, and macerate it in the wine for 2 days, press out and strain the liquor, add the sugar to it, and dissolve the latter by the heat of a water-bath.

Med. Use.—Employed principally for its colour.

Syrupus digitalis. *Sirop de digitale. Syrup of foxglove.*

Codex, Ph. Franç. 1839.

℞ Foxglove leaves . . . ʒxj.
Boiling water . . . ℔v. ʒiiss.
White sugar . . . q. s. (℔x. ʒv.)

Infuse the foxglove in the water for 6 hours, and strain; add to the solution double its weight of sugar, and dissolve by means of a gentle heat.

Note.—One ounce of this syrup contains the soluble matter of about 3½ grains of foxglove leaves.

Syrupus extracti opii. *Sirop d'extrait d'opium. Syrup of extract of opium.*

Codex. Ph. Franç. 1839.

℞ Extract of opium . . gr. ix.
Water . . . . . ʒij. ℈ij.
Syrup. . . . ʒx. ʒiij. gr. xx.

Dissolve the extract of opium in the water, filter the solution, and add it to the boiling syrup; continue the ebullition for a short time, and strain.

Note.—An ounce of this syrup contains nearly 1 grain of the extract of opium.

Syrupus ferri citratis. *Syrup of citrate of iron.*

Beral.

℞ Citrate of peroxide of iron. ʒj.
Syrup . . . . . ʒxv.
Spirit of lemon . . . . ʒij.
Mix.

Syrupus ferri iodidi. *Syrup of iodide of iron.*

Lond. Ph. 1851.

℞ Iodine . . . . . ʒj.
Iron wire . . . . . ʒiij.
Distilled water . . . . fʒxij.,
or as much as may be sufficient.
Sugar . . . . . ʒx.

Mix the iodine and iron with 8 fluidounces of the water, and heat until the solution assumes a greenish colour; then strain. Evaporate the solution to about 4 fluidounces, and add the sugar. Lastly, when the syrup has cooled, add as much as may be sufficient of water, so that it may fill the measure of 15 ounces; and preserve in a well-closed black glass vessel.

Edin. Ph. 1841.

℞ Iodine (dry) . . . . 200 grs.
Fine iron wire, recently cleaned . . . . . 100 grs.
White sugar, in powder . ʒivss.
Distilled water . . . fʒvj.

Boil the iodine, iron, and water together in a glass matrass; at first gently, to avoid the expulsion of iodine vapours, afterwards briskly, until about 2 fluidounces of liquid remain. Filter this quickly, while hot, into a matrass containing the sugar; dissolve the sugar with a gentle heat; and add distilled water, if necessary, to make up 6 fluidounces. 12 minims contain 1 grain of iodide of iron.

Note.—A solution of iodide of iron in syrup. Colourless, or pale green; transparent; without sediment, even when exposed to air.

Dubl. Ph. 1850.

℞ Pure iodine. . . . . ʒv.
Iron turnings, separated by a magnet . . . . . ʒiij.
Distilled water . . . . ʒij.
Simple syrup . . . . . ʒvj.

Introduce the iodine, iron, and water into a glass flask, and apply a moderate heat until the solution loses its red colour. Filter the solution, while hot, into a bottle containing the syrup, mix with agitation, and add distilled water to make up 8 fluidounces. One fluiddrachm contains about 5 grains of iodide of iron.

Use.—A very elegant and effectual tonic in the dose of about 10 to 30 minims.

Syrupus cum fuco helmintho-cortho. *Sirop de mousse de corse. Syrup of Corsican moss.*

Codex, Ph. Franç. 1839.

℞ Corsican moss . . . . ℔j.
Syrup . . . . . ℔vj.

Separate carefully from the moss the sand and shells adhering to it, and macerate it in 2 pounds of lukewarm water for 24 hours, press out strongly, and strain the liquor, and observe its weight. On the residue pour 2 pounds of lukewarm water, and proceed as before. Mix the latter infusion with the syrup, and evaporate it to the consistence of a thick syrup, which should be of the same weight as the syrup used, less the weight of the first infusion of the moss. Add the latter quickly to the syrup, and strain.

Syrupus glycyrrhizæ. *Syrupus liquiritiæ. Syrup of liquorice.*

Ph. Borussica, 1847.

℞ Liquorice root, fresh sliced.	℥viij.
Refined sugar,	
Purified honey. . .	āā ℔ij.
Water	℔iij.

Macerate the liquorice root in the water for one night. Boil the pressed and strained liquor once, and evaporate it with a gentle heat, so that when cold and filtered, there shall remain 14 ounces, in which dissolve the sugar and honey, and with one ebullition make a syrup of a yellowish-brown colour.

Syrupus gummi acaciæ. *Sirop de gomme. Syrup of gum arabic.*

Codex, Ph. Franç. 1839.

℞ Gum-arabic, picked. . .	℥j.
Water	℥j.
Syrup	℥viij.

Wash the gum once or twice with cold water, and add to it the prescribed quantity of water, agitating the mixture frequently to facilitate its solution; strain it through flannel; mix it with the syrup, and continue to boil it until it indicates 29° by Baumé's hydrometer.

Syrupus hemidesmi. *Syrup of Hemidesmus Indicus.*

Dubl. Ph. 1850.

℞ Indian sarsaparilla, bruised.	℥iv.
Boiling distilled water . .	Oj.
Refined sugar, in powder, as much as is sufficient.	

Infuse the sarsaparilla in the water for 4 hours in a covered vessel, and strain; set it by until the sediment subsides; then decant the clear liquor, and having added to it twice its weight of sugar, dissolve with the aid of a steam or water heat.

Mr. Bell.

℞ Root of Hemidesmus Indicus	℔j. avoird.
Refined sugar . . .	℔j. „
Distilled water . .	Oiij.

Bruise the root, separate the bark by sifting, and reject the wood. Add to the bark an equal bulk of sand, moisten them with water, and pack them in a displacement apparatus. Macerate for 4 hours, then displace the liquor with the requisite quantity of water, keeping the first 6 ounces by itself and using as much more water as shall exhaust the bark. Evaporate the latter portions of the liquor, so that with the first 6 ounces it shall form 9 fluidounces, in which dissolve the sugar with a gentle heat.

Syrupus ipecacuanhæ. *Syrup of ipecacuanha.*

Edin. Ph. 1841.

℞ Ipecacuan, in coarse powder	℥iv.
Rectified spirit	Oj.
Proof spirit,	
Water	āā f℥xiv.
Syrup	Ovij.

Digest the ipecacuan in 15 fluidounces of the rectified spirit, at a gentle heat, for 24 hours; strain, squeeze the residuum, and filter. Repeat this process with the residuum and proof spirit, and again with the water. Unite the fluids, and distil off the spirit, until the residuum amount to 12 ounces; add to the residuum 5 fluidounces of the rectified spirit, and then the syrup.

Codex, Ph. Franç. 1839.

℞ Alcoholic extract of ipecacuanha . . . . gr. xxxij.
Water . . . . . ʒss. gr. x.
Syrup . . . . . ʒix. ʒiij.

Dissolve the extract in the water, and filter the solution, and add it to the boiling syrup. Continue the ebullition until the syrup has acquired its original consistence, and strain.

Note.—1 ounce of this syrup contains about 3 grains of extract, or the active matter of 12 grains of the root.

Ph. Borussica, 1847.

℞ Ipecacuanha root, bruised . ʒiij.
Rectified spirit (sp. gr. ·835). . . . . ʒx.
Refined sugar . . . . ℔iss.
Water . . . . . ʒxss.

Digest the ipecacuanha in the water and spirit for 24 hours, and filter. Dissolve the sugar in 11 ounces of the strained liquor, and with one ebullition make a syrup of a yellowish colour.

Med. Use.—As an adjunct to cough mixtures—may be given to infants and young children.

Dose.—ʒss. to ʒj.

Syrupus ipecacuanhæ compositus. *Sirop d'ipecacuanha composé. Sirop de desessart. Compound syrup of ipecacuanha.*

Codex, Ph. Franç. 1839.

℞ Ipecacuanha . . ʒiv.
Senna . . . . ℔j.
Tops of wild thyme, dried. . . . ʒiv.
Red poppy petals, dried. . . . ℔j. ʒiij. ʒv.
Sulphate of magnesia, ℔j.
White wine . . ℔vij. ʒix. ʒvj.
Orange-flower water, ℔vij. ʒix. ʒvj.
White sugar . . q. s.

Macerate the ipecacuanha and the senna in the wine for 12 hours, press out, and strain the liquor. Put the residue in a water-bath, with the poppy petals, the thyme, and the sulphate of magnesia; pour on them 31 pounds and 1 ounce of boiling water, infuse and press as before. Mix the product with the vinous solution and orange-flower water, add to the mixture double its weight of sugar, and make the syrup with the heat of a water-bath.

Syrupus lactucæ. *Sirop de thridace. Syrup of lettuce.*

Codex, Ph. Franç. 1839.

℞ Extract of lettuce . gr. xxviij.
Water . . . . ʒss. gr. xvj.
Syrup . . . . ʒiv. ʒj. ℈j.

Dissolve the extract in the water, and filter the solution, and add it to the boiling syrup. Continue the ebullition until the syrup has acquired its original consistence, and strain.

Note.—One ounce of this syrup contains nearly six grains of extract.

Syrupus lichenis islandici. *Syrup of Iceland moss.*

Ph. Hannov. Nova, 1831.

℞ Iceland moss . . . . ʒvj.
Water . . . . . ℔vj.
Sugar . . . . . ℔v.

Boil the Iceland moss with the water, until reduced to ℔iv., then strain, and form the liquor into a syrup with the sugar.

Syrupus limonum. *Syrup of lemons.*

Lond. Ph. 1851.

℞ Strained juice of lemons . . Oj.
Sugar . . . . . ℔iiss.
Rectified spirit . . . . fʒiiss.

Boil the juice for the sixth part of an hour, and strain. Add the sugar to this, and dissolve. Lastly, when the syrup shall have cooled, mix in the spirit.

Edin. Ph. 1841.

℞ Lemon-juice freed of impurities by subsidence and filtration. . . . . Oj.
Sugar . . . . . ℔iiss.

Dissolve the sugar in the lemon-juice, with the aid of a gentle heat, and after twenty-four hours' rest remove the scum, and pour the clear liquor from the dregs.

Med. Use.—An agreeable adjunct to diluent drinks, as barley water, in febrile and inflammatory complaints, and to gargles.

Dose.—f ʒj. to f ʒiv.

SYNONYMES.

Syrupus e succo citriorum.—Lond. Ph. 1721.

Syrupus e succo limonum.—Lond. Ph. 1746.

Syrupus citri medicæ.—Edin. Ph. 1839.

SYRUPUS LIQUIRITIÆ. *Syrup of liquorice.*

Ph. Hannov. Nova, 1831.

℞ Liquorice-root	ʒviij.
Hot water	℔ij.
Sugar	℔ij.
Purified honey	℔ij.

Boil the liquorice with the water for a quarter of an hour; evaporate the strained liquor to ʒxiv., and make it into a syrup with the sugar and honey.

SYRUPUS MANNÆ. *Syrup of manna.*

Codex Med. Hamberg. 1845.

℞ Senna	ʒiv.
Fennel-seed	ʒss.
Sugar	ʒxx.
Honey	ʒiv.
Manna	℔ss.
Boiling water	℔ij.

Macerate the senna and fennel seed in the water for two hours, then strain ʒxviij., in which dissolve the other ingredients, and make a syrup.

SYRUPUS MORI. *Syrup of mulberry.*

Lond. Ph. 1851.

℞ Strained juice of mulberry	Oj.
Sugar	℔iiss.
Rectified spirit	ʒiiss.

Dissolve the sugar in the juice, with a gentle heat, and set aside for 24 hours, then remove the scum, and pour off the pure liquor from the dregs, if those there may be. Lastly, mix in the spirit.

Med. Use.—Used as a colouring and flavouring substance.

SYRUPUS MORPHIÆ ACETATIS. *Syrup of acetate of morphia.*

Dubl. Ph. 1850.

℞ Solution of acetate of morphia	f ʒj.
Simple syrup	f ʒxv.

Mix with agitation.

SYRUPUS MORPHIÆ MURIATIS. *Syrup of muriate of morphia.*

Dubl. Ph. 1850.

℞ Solution of muriate of morphia	f ʒj.
Simple syrup	f ʒxvij.

Mix with agitation.

SYRUPUS MORPHIÆ SULPHATIS. *Syrupus cum sulfate morphico. Syrop de sulfate de morphine. Syrup of sulphate of morphia.*

Codex, Ph. Franç. 1839.

℞ Sulphate of morphia,	gr. 3·60.
Syrup	ʒxvj. gr. xxxvij.

Dissolve the sulphate of morphia in a little water, and mix it with the cold syrup.

Note.—An ounce contains about one-fourth of a grain of sulphate of morphia.

SYRUPUS PAPAVERIS. *Syrup of poppy.*

Lond. Ph. 1851.

℞ Bruised poppy, the seeds having been removed	℔iij.
Sugar	℔v.
Boiling distilled water	Cong. v.
Rectified spirit	f ʒv.

Boil down the water with the poppy, to 2 gallons, and express strongly. Boil down the strained liquor again to 4 pints, and

strain whilst yet hot. Set aside for 12 hours, that the dregs may subside; then boil down the strained liquor to 2 pints, and dissolve the sugar in this. Lastly, mix in the spirit.

Edin. Ph. 1841.

℞ Poppy-heads, without the seeds	℔iss.
Boiling water	Oxv.
Pure sugar	℔iij.

Slice the poppy-heads, infuse them in the water for 12 hours, boil down to 5 pints, strain, and express strongly through calico; boil again down to 2 pints and a-half; then add the sugar, and dissolve it with the aid of heat.

Codex, Ph. Franç. 1839.

℞ Alcoholic extract of white poppy	gr. xvj.
Water	ʒij. gr. v.
Syrup	℥iij. ʒj.

Dissolve the extract in the water, filter the solution, and add it to the boiling syrup, and evaporate it to the consistence of a syrup.

Note.—One ounce of this syrup contains about five grains of extract.

Med. Use.—Narcotic, sedative, and anodyne.

Dose.—From ʒss. to ʒij., according to the age of the patient.

SYNONYMES.

Syrupus de meconio sive diacodium.—Lond. Ph. 1721.

Syrupus papaveris albi.—Lond. Ph. 1788. Dubl. Ph. 1807.

Syrupus quinæ sulphatis. *Sirop de sulfate de quinine. Syrup of sulphate of quinine.*

Codex, Ph. Franç. 1839.

℞ Sulphate of quinine	grs. ix.
Syrup	℥v. ʒj. ℈ij.
Distilled water	℈ij.
Alcoholized sulphuric acid (1 part acid, 3 parts alcohol)	gr. iss.

Dissolve the quinine in the water, to which the alcoholized sulphuric acid has been added, and mix the solution with the cold syrup.

Syrupus ratanhiæ. *Sirop de ratanhia. Syrup of rhatany.*

Codex, Ph. Franç. 1839.

℞ Extract of rhatany	gr. xvj.
Water	ʒij. gr. v.
Syrup	℥j. ℈j.

Dissolve the extract in the water, and filter the solution. Boil the syrup until it has lost one-fourth in weight, then add to it the solution of the extract, and strain.

Note.—One ounce of this syrup contains about twelve grains of extract of rhatany.

Syrupus rhœados. *Syrup of red poppy.*

Lond. Ph. 1851.

℞ Red poppy	℔j.
Boiling distilled water	Oj.
Sugar	℔iij., or as much as may be sufficient.
Rectified spirit	f℥iiss., or as much as may be sufficient.

Gradually add the red poppy to the water heated in a water-bath, frequently stirring; then, the vessel being set aside, macerate for 12 hours; then press out the liquor with the hand, and strain, and finish in the same manner as it is directed concerning the syrup of marsh-mallow.

Edin. Ph. 1841.

℞ Corn-poppy petals	℔j.
Boiling water	Oj.
Pure sugar	℔iiss.

Heat the water over a vapour-bath, add the petals by degrees, stirring occasionally; remove the vessel from the bath, infuse for 12 hours; strain, and express the liquor; add to it the sugar, and dissolve this with the aid of heat.

Used for its fine red colour.

SYNONYME.

Syrupus papaveris erratici.—Lond. Ph. 1788. Dubl. Ph. 1807.

SYRUPUS RHAMNI. *Syrup of buckthorn.*

Lond. Ph. 1851.

℞ Juice of buckthorn	Oiv.
Sliced ginger	
Powdered pimenta, of each.	ʒvj.
Sugar	℔bvj.
Rectified spirit	f ʒvj.

Set aside the juice for 3 days, that the dregs may subside, and strain. Add the ginger and pimenta to a pint of the strained juice; then macerate with a gentle heat for 4 hours, and strain. Boil down that which is left to the measure of a pint and a-half. Mix the liquors, and dissolve the sugar in these. Lastly, mix in the spirit.

Edin. Ph. 1841.

The same as the London, except that the Edin. Ph. directs the sugar to be dissolved "with the aid of heat."

SYNONYME.

Syrupus de spina cervina.—Lond. Ph. 1780.

Med. Use.—A drastic cathartic; is but seldom used, excepting in veterinary medicine.

Dose.—ʒj. to ʒiv.

SYRUPUS RHEI. *Syrup of rhubarb.*

U. S. Ph. 1840. *Syrupus rhei.*

℞ Rhubarb, sliced	ʒij.
Boiling water	f ʒxvj.
Sugar	℔ij.

Macerate the rhubarb in the water for 24 hours, then strain, and add the sugar.

Ph. Borussica, 1847.

Syrupus rhei. Syrup of rhubarb.

℞ Rhubarb root, sliced	ʒiij.
Cinnamon, bruised	ʒvj.
Pure carbonate of potash	ʒij.
Refined sugar	℔ij.
Water	℔ij.

Mix together the rhubarb, cinnamon, carbonate of potash, and water, and macerate one night. In twenty ounces of the strained liquor, dissolve the sugar, and with one ebullition make a syrup of a brownish-red colour.

SYRUPUS RHEI AROMATICUS. *Aromatic syrup of rhubarb.*

U. S. Ph. 1850.

℞ Rhubarb, bruised	ʒiiss.
Cloves, bruised,	
Cinnamon, bruised	āā ʒss.
Nutmegs, bruised	ʒij.
Diluted alcohol	Oij.
Syrup	Ovj.

Macerate the rhubarb and aromatics in the diluted alcohol for 14 days, and strain; then by means of a water-bath evaporate the liquor to a pint, and while it is yet hot mix it with the syrup previously heated.

Aromatic syrup of rhubarb may also be prepared by putting the rhubarb and aromatics, previously reduced to coarse powder and moistened with diluted alcohol, into a percolator; pouring upon them gradually diluted alcohol, until 2 pints of filtered liquor are obtained; then evaporating to a pint, and completing the process as above directed.

Med. Use.—A mild aperient.

Dose.—f ʒj. for an infant.

SYRUPUS RHEI ET SENNÆ.

Edin. Ph. 1744.

℞ Rhubarb	ʒi.
Senna	ʒij.
Fennel-seeds	ʒij.
Cinnamon	ʒij.
Boiling water	Oiiss.
Sugar	℔iij.

Macerate all except the sugar for 12 hours then strain, add the sugar, and boil-

Syrupus rosæ. *Syrup of rose.*

Lond. Ph. 1851.

℞ Hundred-leaved rose . .	℥vij.
Sugar	℔vj.
Boiling distilled water . .	Oiij.
Rectified spirit	f ℥vss.

Macerate the rose in the water for 12 hours, and strain. Evaporate the strained liquor in a water-bath to 2 pints, and dissolve the sugar in this. Lastly, mix in the spirit.

Edin. Ph. 1841. *Syrupus rosæ centifoliæ.*

℞ Fresh damask rose petals .	℔j.
Boiling water	Oiij.
Pure sugar	℔iij.

Infuse the petals in the water for 12 hours, strain the liquor, and dissolve the sugar in it with the aid of heat.

Dubl. Ph. 1850.

Syrupus rosæ gallicæ.

℞ Petals of the Gallic rose, dried	℥ij.
Boiling distilled water . .	Oj.
Refined sugar, in powder, as much as may be sufficient.	

Boil the petals in the water in a glass or porcelain vessel, until their colour is completely extracted; strain with expression, and let the decoction stand until the sediment subsides; then, having decanted the supernatant liquor, add to it twice its weight of sugar, and dissolve with the aid of a steam or water heat.

Med. Use.—Laxative; may be given to infants.

Dose.—℥ij to ℥iv.

SYNONYMES.

Syrupus e rosis siccis.—Lond. Ph. 1721.

Syrupus rosarum solutivus.—Lond. Ph. 1746.

Edin. Ph. 1841. *Syrupus rosæ gallicæ.*

℞ Dried red rose petals . .	℥ij.
Boiling water	Oj.
Pure water.	℥xx.

Proceed as for the syrup of damask rose.

Med. Use.—Astringent; is sometimes added to astringent gargles.

Syrupus rubi idæi. *Syrup of raspberry.*

Ph. Borussica, 1847.

℞ Raspberries, fresh, bruised,
Refined sugar, āā, quantum placet.

Bruise the raspberries, and let them stand 3 days, then press out the juice and set it by until it appears clear, and fermentation has ceased. Dissolve in 20 ounces of the juice strained, 3 pounds of refined sugar, and make a syrup at 1 ebullition, of a red colour.

Syrupus rutæ. *Syrup of rue.*

℞ Fresh rue	℥ij.
Boiling water	Oj.
Sugar	q. s.

Macerate the rue in the water for 2 hours and strain, then add enough sugar to form a saturated syrup.

Med. Use.—Antispasmodic and carminative; given to children.

Dose.—A teaspoonful.

Syrupus sarzæ. *Syrup of sarsaparilla.*

Lond. Ph. 1851.

℞ Sarsaparilla	℔iiiss.
Distilled water . . .	Cong. iij.
Sugar	℥xviij.
Rectified sugar . . .	f ℥ij.

Boil down the sarsaparilla in 2 gallons of the water to a gallon; pour off the liquor, and strain whilst yet hot. Boil down the sarsaparilla again, in the remaining water, to a half, and strain. Evaporate the liquors, mixed together, to 2 pints, and dissolve the sugar in these. Lastly, when they shall have cooled, mix in the spirit.

Edin. Ph. 1841.

℞ Sarsaparilla, sliced . .	℥xv.
Water, boiling . . .	conj. j.
Sugar	℥xv.

Macerate the sarsaparilla in the water for 24 hours; then boil down to 4 pints, and strain the liquor while hot; afterwards add the sugar, and evaporate to a proper consistence.

Med. Use.—The same as the root itself.

Dose.—ʒj to ʒiv.

Syrupus cum extracto sarsaparillæ. *Sirop de salsepareille. Syrup of sarsaparilla.*

Codex, Ph. Franç. 1839.

℞ Alcoholic extract of sarsaparilla . . ʒiij. gr. xij.
Water . . . . ℥iv. ʒj. ℈j.
White sugar . . ℥viij. ʒij. ℈ij.

Dissolve the extract in the water by the heat of a water-bath; filter the solution, add the sugar to it, and dissolve.

This syrup, which has been adopted by the Codex, was originally proposed by M. Beral to replace that made with water, which is less constant in its composition. The syrup contains 15½ grains of extract in each ounce.

Syrupus scillæ. *Syrup of squill.*

Edin. Ph. 1841.

℞ Vinegar of squill . . . Oiij.
Pure sugar, in powder . . ℔vij.

Dissolve the sugar in the vinegar of squills with the aid of a gentle heat and agitation.

Dubl. Ph. 1850.

℞ Vinegar of squill . . . f ℥viij.
Refined sugar, in powder . ℔j.

Dissolve the sugar in the vinegar of squill with the aid of a steam or water heat.

Med. Use.—An expectorant in chronic catarrhs and asthma.

Dose.—ʒj to ʒij.

Syrupus senegæ. *Syrup of senega.*

Ph. Borussica, 1847.

℞ Senega root, sliced . . . ℥j.
Rectified spirit (sp. gr. ·835) ʒxj.
Refined sugar . . . . ℔iss.
Water . . . . . ℥xj.

Macerate the root in the water and spirit for 2 days, then press strongly and filter. Dissolve the sugar in 11 ounces of the strained liquor, and at 1 ebullition make a yellowish-coloured syrup.

Codex Medic. Hamberg, 1845.

℞ Senega root. . . . . ℥j.
Sugar . . . . . ℔iss.
Water . . . . . ℔iss.

Boil the senega root in the water down to ℥x, then strain; add the sugar, and make a syrup.

Syrupus sennæ. *Syrup of senna.*

Lond. Ph. 1851.

℞ Senna . . . . . ℥iiiss.
Bruised fennel . . . . ʒx.
Manna . . . . . ℥iij.
Boiling distilled water . . Oj.
Treacle . . . . . ℔iij.

Macerate the senna and fennel in the water with a gentle heat for 6 hours; press out the liquor strongly through linen, and strain and mix in the manna to it. Evaporate the treacle in a water-bath, until any part removed from the bath may nearly concrete, and add the liquor to the same whilst yet hot, constantly stirring until they may be mixed.

Edin. Ph. 1841.

℞ Senna . . . . ℥iv.
Boiling water . . Oj. and f ℥iv.
Treacle . . . . ℥xlviij.

Infuse the senna in the water for 12 hours; strain and express strongly through calico, so as to obtain a pint and 2 fluid-ounces at least of liquid. Concentrate the treacle in the vapour-bath as far as possible, or till a little taken out upon a rod becomes nearly concrete on cooling; and while the treacle is still hot, add the

infusion, stirring carefully, and removing the vessel from the vapour-bath as soon as the mixture is complete.

If Alexandrian senna be used for this preparation, it must be carefully freed of cynanchum leaves by picking it.

Med. Use.—As a purgative for children.

Dose.—ʒij to ʒiss.

Syrupus sennæ cum manna. *Syrupus mannæ. Syrup of senna with manna.*

Ph. Borussica, 1847.

℞ Senna leaves, cut	ʒiv.
Fennel seeds, bruised	ʒss.
Manna	℔ss.
Refined sugar	℔ij.
Warm water	℔ij.

Pour the water on the senna and fennel, and let them stand some hours in a close vessel; press and strain the liquor, and dissolve the sugar and manna in 18 ounces of it, and with 1 ebullition make a brown-coloured syrup.

Syrupus tolutanus. *Syrup of Tolu.*

Lond. Ph. 1851.

℞ Balsam of Tolu	ʒx.
Water, boiling	Oj.
Sugar	℔iiss.

Boil the balsam in the water for half-an-hour in a vessel lightly covered, frequently stirring, and strain the cooled liquor; then add the sugar, and dissolve it.

Edin. Ph. 1841.

℞ Simple syrup	℔ij.
Tincture of Tolu	ʒj.

When the syrup has been recently prepared, and has not altogether cooled, add the tincture of Tolu by degrees, agitating briskly.

Dubl. Ph. 1850.

℞ Balsam of Tolu	ʒj.
Distilled water	Oj.
Refined sugar, in powder, as much as may be sufficient.	

Boil the balsam in the water for half-an-hour in a lightly-covered vessel, occasionally stirring, and strain the liquor when cold; then, having added to it twice its weight of sugar, dissolve with the aid of a steam or water heat.

Used to impart an agreeable flavour to cough mixtures, draughts, &c.

Dose.—f ʒj to f ʒiv.

SYNONYMES.

Syrupus balsamicus.—Lond. Ph. 1746.

Syrupus toluiferi balsami.—Edin. Ph. 1839.

Syrupus vegetabilis. *Vegetable syrup.*

Ph. Castr. Ruthenæ, 1840.

℞ Bardana root, fresh cut	ʒj.
Dandelion root	ʒss.
Liquorice root	ʒss.
Peppermint	ʒss.
Senna	ʒvj.
Water	℔iij.
Sugar	℔j.

Boil all the ingredients but the sugar in the water, then strain, add the sugar, and make a syrup.

Syrupus violæ. *Syrup of violet.*

Lond. Ph. 1851.

℞ Violet	ʒix.
Boiling distilled water	Oj.
Sugar	℔iij., or as much as may be sufficient.
Rectified spirit	f ʒiiss., or as much as may be sufficient.

Macerate the violet in the water for 12 hours, then press out and strain. Set aside that the dregs may subside, and finish as it is directed concerning the syrup of marshmallow.

Edin. Ph. 1841.

℞ Fresh violets . . . ℔j.
Boiling water . . . Oiiss.
Pure sugar . . . . ℔viiss.

Infuse the flowers for 24 hours in the water, in a covered glass or earthenware vessel; strain without squeezing, and dissolve the sugar in the filtered liquor.

Use.—Gently laxative to children.

Dose.—℥j to ℥ij.

Syrupus zingiberis. *Syrup of ginger.*

Lond. Ph. 1851.

℞ Sliced ginger . . . . ℥iiss.
Boiling distilled water . . Oj.
Sugar . . . . . ℔iiss.,
or as much as may be sufficient.
Rectified spirit, as much as may be sufficient.

Macerate the ginger in the water for 4 hours; press out the liquor and strain, and finish as it is directed concerning the syrup of marshmallow.

Edin. Ph. 1841.

The same as the London, except that the Ed. Ph. orders the sugar to be dissolved "with the aid of heat."

Dubl. Ph. 1850.

℞ Tincture of ginger . . . f ℥j.
Simple syrup . . . . f ℥vij.

Mix with agitation.

Med. Use.—Stomachic and carminative.

Dose.—f ℥j to f ℥iv.

Talc. *Foliated talc. Ubruc.*

A transparent crystalline mineral, consisting of easily-separated folia, of a white, or greenish, or yellowish-white colour. It consists essentially of silica and magnesia.

Taraxacum coffee. *Dandelion coffee.*

A powder is sold, under this name, which consists of taraxacum roots well cleaned, dried, and powdered, and mixed with coffee.

Tartarus ammoniatus. *Ammoniated tartar. Tartarus solubilis.*

Ph. Badensia, 1841.

℞ Cream of tartar,
Caustic ammonia. . . āā q. s.

Dissolve the cream of tartar in the caustic ammonia with a gentle heat in a closed vessel, taking care to have ammonia in excess; then strain and let it stand, that crystals may be formed, and evaporate the mother-liquor, that more crystals may be obtained.

Note.—Transparent prismatic crystals, which slightly effloresce in the air. Soluble in 2 parts of cold, and 1 part of boiling water.

Ph. Castr. Ruthena, 1840.

℞ Cream of tartar . . . 1 part.
Water . . . . . 2 parts.
Carbonate of ammonia . . q. s.

Dissolve, by aid of heat, the cream of tartar in the water, then add carbonate of ammonia in small quantities, until effervescence ceases, and the fluid smells of ammonia; strain, while hot, through linen, and let crystallize. The crystals are to be quickly dried with blotting-paper, and kept in a cold place.

Ph. Saxonica, 1837.

Dissolve cream of tartar in a tin vessel in hot distilled water, and add to the solution sufficient solution of carbonate of ammonia to render it slightly alkaline. Allow the fluid to stand for some time, then filter, and evaporate with a gentle heat, and let crystallize.

Note.—The crystals have a sharp, saltish, and cooling taste. Soluble in 2 parts of water.

Dose.—℥iv.

Tartarus boraxatus. *Cremor tartari solubilis. Boro-tartrate of potash.*

Ph. Borussica, 1847.

℞ Borax	℔ss.
Purified cream of tartar, free from tartrate of lime	℔iss.
Boiling distilled water	℔v.

Dissolve the borax in the water in a porcelain vessel, and add the cream of tartar; filter the solution, and evaporate it in a vapour-bath with a gentle heat, until a tenacious mass is obtained, small portions of which, when cold, are friable. Then remove it from the vessel whilst warm, lay it on strips of paper, and dry it with a gentle heat; and when powdered, put it into a warm glass vessel, in which let it be kept quite close.

Note.—It should be a white powder, very deliquescent, of an acid taste, and very soluble in an equal weight of water. Similar formulæ are given in the Ph. Hannov. Nov. 1831; and the Ph. Castr. Ruthena, 1840. See also page 893.

Tartarus depuratus pulveratus. *Cremor tartari. Purified cream of tartar.*

Ph. Borussica, 1847.

℞ Cream of tartar, powdered	℔x.
Hydrochloric acid (sp. gr. 1·190)	℔j.
Distilled water	℔x.

Mix the acid and water, and pour them on the cream of tartar; digest them in a vapour-bath, with frequent agitation, for some hours, and set by until the next day. Place it in a linen bag, and wash it well, first with common, and then with distilled water, until the liquid that passes through is as free as possible from hydrochloric acid, and dry the residue with a gentle heat.

Tela vesicatoria. *Taffetas vesicatorium. Blistering tissue.*

No. 1.

℞ White wax	240 parts.
Spermaceti	30 „
Olive oil	120 „
Common turpentine	30 „
Cantharides	30 or 60 parts.
Water	300 parts.

Digest in a water-bath for 2 hours, then strain and separate the plaster from the water. A thin coating of this plaster is to be spread, while fluid, over oiled silk or waxed paper.

No. 2.

℞ White wax	8 parts.
Ethereal extract of cantharides	4 „

Mix the extract with the wax, melted, and spread the mixture over oiled silk or waxed paper, as No. 1, and subsequently brush it over with solution of benzoin and Canada balsam in spirit.

No. 3.

Codex Medic. Hamberg. 1845.

℞ Mezerion	ʒvj.
Cantharides	ʒvj.
Acetic ether	℥iv.
Gum sandarach	℥ij. ℥ij. ℈ij.
Gum mastic	ʒj.
Turpentine	℈ij.
Oil of lavender	gtt. xx.

Macerate, separately, the mezerion bark, and the cantharides in ℥ij. of acetic ether for 8 days, then press, strain, and mix the tinctures, and dissolve in them the other ingredients.

Spread this mixture with a camel-hair brush on wax taffetas (oil-skin), 30 inches long and 20 wide; then cut it into strips, 5 inches long and 4 wide.

No. 4.

Ph. Badensia, 1841.

Tela sericea epispastica.

℞ Euphorbium	℥j.
Cantharides, powdered	℥x.
Rectified spirit	℔iij.
Isinglass	ʒvij.
Water	q. s.

Macerate the euphorbium and cantha-

rides in the rectified spirit; strain, and distil off ℔iiss. of alcohol. Macerate and evaporate with the isinglass, which is previously to be made into a jelly with sufficient quantity of water, so that only ℥xij. remain. This, while warm, is to be spread with a brush or strained silk. The other side of the silk may be covered with a tincture of balsam of Peru and benzoin.

The spirit recovered in this process must not be used for medical or pharmaceutical purposes.

Note.—Croton oil, or extract of mezerion, is sometimes substituted for extract of cantharides.

Terra ampelites. *Ampelitis. Pharmacitis. Kennel coal. Cannel coal. Parrot coal.*

This variety of coal, formerly obtained principally from Alençon, in France, yields a large quantity of gas when heated, and has been used as a substitute for candles. It was once used in medicine, and hence its name, Pharmacitis. It was used to kill worms, and as an antidote to all vermin.

Terra lemnia. *Terra sigillata. Lemnian earth. Sealed earth.*

Lemnian earth is a kind of bole, originally brought from the island of Lemnos, and said to have been obtained from a hill where no plant grew. There are two kinds, one whitish, or grey, the other of a reddish colour. The Turks, who were formerly the principal dealers in this earth, made it into little flat, circular cakes, which were stamped with the impression of a seal and the name *Terra sigilla*, *Sealed earth*, is applied to it in this state.

Many virtues, purely imaginary, were ascribed to it. It has long since been replaced by chalk and Armenian bole.

Testæ preparatæ. *Prepared shells.*

Lond. Ph. 1836.

Wash the shells, first freed from impurities, with boiling water; then prepare them in the same manner as directed for chalk.

Omitted in the Lond. Ph. 1851.

SYNONYMES.

Testæ ostreorum præparatæ. — Lond. Ph. 1746 and 1788.

Tinctura absinthii. *Tincture of wormwood.*

Ph. Borussica, 1847.

℞ Wormwood . . . . ℥vj.
Rectified spirit (sp. gr. ·897 to ·900) . . . . . ℔iij.

Pour the spirit on the wormwood, cut very small, macerate for 8 days in a close vessel, with frequent agitation, then press it out and strain.

Note.—It should be of a greenish-brown colour.

Tinctura aconiti. *Tincture of aconite.*

Lond. Ph. 1851.

℞ Coarsely-powdered root of Aconite . . . . . ℥xv.
Rectified spirit . . . . . Oij.

Macerate for 11 days; then press out, and strain.

Dubl. Ph. 1850.

Tinctura radicis aconiti.

℞ Aconite root, dried, and cut small . . . . . ℥x.
Rectified spirit . . . . Oj.

Macerate for 14 days, strain, express, and filter.

Dose.—8 to 10 minims 3 times a day.

Dr. Fleming.

The following has been frequently prescribed as Dr. Fleming's. Tincture of aconite:—

℞ Aconite root, dried and powdered. . . . . ℥xvj.
Rectified spirit . . . . f℥xvj.

Macerate for 4 days, then pack in a percolator, and add rectified spirit, until f℥xxiv. of tincture has percolated through.

Dose.—5 minims 3 times a day.

Ph. Borussica, 1847.

℞ Aconite, cut very small . . ℥j.
Rectified spirit (sp. gr. ·897 to ·900) . . . . . ℔j.

Pour the spirit on the aconite, macerate for 8 days in a close vessel, with frequent agitation; then press it out and strain, and preserve it carefully.

Note.—It should be of a green colour.

Ph. Badensia, 1841.

Tinctura aconiti. Essentia aconiti. Essence of aconite.

℞ Aconite herb, dried and powdered . ℥viij.
Rectified spirit . . ℥xvj. or q. s.

Macerate for 4 days, in a closed vessel, at a temperature of 20°, (68° Fahr.,) then press and strain the tincture into a weighed bottle. The marc is to be again macerated in spirit as before, pressed and strained through the same filter, until the weight of the tincture amounts to double that of the herb employed.

Note.—Dark brownish green; becomes greenish yellow and opaque when mixed with water. Sp. gr. ·864 at 17°.

Tinctura aconiti ex herba recente. *Tincture of fresh aconite herb.*

Codex Medic. Hamberg. 1845.

℞ Fresh aconite, crushed . . ℔j.
Rectified spirit . . . . ℥viij.

Macerate for 8 days, then press, strain, and filter, so as to make ℔j.

Note.—℥j. is equal to 480 grains fresh, or 90 grains of the dry herb. To be prepared in June, and kept with precaution.

Tinctura aconiti ætherea. *Ethereal tincture of aconite.*

Codex Medic. Hamberg. 1845.

℞ Aconite herb, cut . . . ℥j.
Spirit of sulphuric ether. . ℥viij.

Macerate for 8 days, then strain ℥vj.

Note.—℥j. is equal to 8 grains of dry herb. To be kept with precaution.

Tinctura aconiti salina. *Saline tincture of aconite.*

Codex Medic. Hamberg. 1845.

℞ Aconite herb, roughly powdered. . . . . ℥j.
Solution of acetate of ammonia . . . . . ℥vj.

Rub the aconite herb with ℥ij. of the solution of acetate of ammonia for half an hour then add the remainder of the solution, and macerate for 8 days; after which press and filter, so as to make ℥v.

Note.—℥j. is equal to 96 grains of the dry herb. It is of a dark-brown colour.

Tinctura ætherea cum cantharidibus. *Teinture éthérée de cantharides. Ethereal tincture of cantharides.*

Codex, Ph. Franç., 1839.

℞ Cantharides, powdered ʒij. gr.v.
Acetic ether . . . ʒij. ℈ij

Macerate in a stoppered glass vessel for 8 days, then press out and filter the tincture.

Tinctura aloes. *Tincture of aloes.*

Lond. Ph. 1851.

℞ Coarsely-powdered socotrine, or hepatic aloes . . . ℥j.
Extract of iquorice . . . ʒiij.
Distilled water . . . . Oiss.
Rectified spirit . . . . Oss.

Macerate the aloes in the spirit, mixed with the water, for 7 days; then add the extract that it may be dissolved, and strain.

Edin. Ph. 1841.

℞ Aloes (Socotrine or Indian), in coarse powder. . . . ℥j.
Extract of liquorice . ℥iij.
Rectified spirit . . f℥xij.
Water . . . . Oj and f℥viij.

Mix them, and digest for 7 days, with occasional agitation; filter the clear liquor, separated from the sediment. This tincture cannot without difficulty and delay be prepared by percolation.

Med. Use.—Similar to that of aloes.

Dose.—℥iij. to ʒiv.

Tinctura aloes composita. *Compound tincture of aloes.*

Lond. Ph. 1851.

℞ Coarsely-powdered socotrine, or hepatic aloes . . . ℥iv.
Tincture of myrrh . . . Oij.

Macerate for 7 days, and strain.

Edin. Ph. 1841.

Tinctura aloes et myrrhæ.

℞ Aloes, powdered . . . . ℥iv.
Saffron . . . . . ℥ij.
Tincture of myrrh . . . Oij.

Macerate for 14 days, and strain. (Lond.) Digest for 7 days, and filter the clear superincumbent liquor. (Edin.)

Med. Use.—Cathartic and emmenagogue; serviceable in cold, languid habits, and chlorosis.

Dose.—ʒj. to ʒij.

SYNONYMES.

Elixir proprietatis.—Lond. Ph. 1721.
Elixir aloës.—Lond. Ph. 1746.

Tinctura aloetica. *Aloetic tincture.*

Codex Medic. Hamberg. 1845.

℞ Tincture of aloes . . . . ℥iij.
Tincture of myrrh . . . ℥iv.
Tincture of saffron . . . ℥ij.

Mix.

Tinctura aloetica acida. *Acid aloetic tincture.*

Codex Medic. Hamberg. 1845.

℞ Aloetic tincture . . . . ℥j.
Diluted sulphuric acid . . ʒj.

Mix.

Tinctura amara. *Bitter tincture.*

Ph. Borussica, 1847.

℞ Lesser centaury,
Unripe oranges,
Gentian root . . . . āā ℥ij.
Zedoary root . . . . . ℥j.
Rectified spirit (sp. gr. ·897 to ·900) . . . . . ℔iij.

On the other ingredients, sliced and bruised, pour the rectified spirit; macerate for 8 days in a close vessel, with frequent agitation, then press it out and strain.

Note.—It should be of a greenish-brown colour.

The same formula is given in the Codex Medic. Hamberg. 1845.

Tinctura ammoniæ composita. *Compound tincture of ammonia.*

Lond. Ph. 1851.

℞ Mastich . . . . . ʒij.
Rectified spirit. . . . f℥ix.
Oil of lavender . . . ♏xiv.
Stronger solution of ammonia . . . . . Oj.

Macerate the mastich in the spirit, that it may be dissolved, and pour off the clear tincture; then the rest being added, shake all together.

Med. Use.—Stimulant.

Dose.—♏x. to ʒss.

SYNONYMES.

Spiritus ammoniæ succinatus.—Lond. Ph. 1788.

Eau de Luce. (See also page 707.)

TINCTURA ARNICÆ. *Tincture of arnica.*

Ph. Borussica, 1847.

℞ Arnica flowers, cut . . . ℥iss.
Rectified spirit (sp. gr. ·897 to ·900). . . . . ℔j.

Pour the spirit on the arnica flowers, macerate for 8 days in a close vessel, with frequent agitation, then press it out and strain.

Note.—It should be of a brownish-yellow colour.

The same formula is given in the Codex Medic. Hamberg. 1845.

Ph. Badensia, 1841.

Tinctura arnicæ florum. Essentia florum arnicæ. Essence of arnica.

℞ Arnica flower, dried and powdered. . ℥viij.
Rectified spirit . . ℥xvj. or q. s.

Macerate for 4 days in a closed vessel, at a temperature of 20°, (68° Fahr.,) then press and filter the tincture into a weighed bottle. The marc is to be again macerated in spirit as before, pressed, and passed through the same filter, until the weight of the tincture amounts to double that of the herb employed.

Note.—Brownish-yellow, with the smell of arnica. It becomes yellowish-white and opaque when mixed with water. Sp. gr. ·800.

TINCTURA AROMATICA. *Aromatic tincture.*

Ph. Borussica, 1847.

℞ Cinnamon . . . . . ℥ij.
Lesser cardamoms,
Cloves,
Galangal root,
Ginger . . . . . āā ℥ss.
Rectified spirit (sp. gr. ·897 to ·900) . . . . . ℔ij.

Pour the spirit on the other ingredients, reduced to a coarse powder; macerate for 8 days in a close vessel, with frequent agitation, then press it out and strain.

Note.—It should be of a brownish-red colour.

TINCTURA AROMATICA ACIDA, *loco Elixir vitrioli mynsichti. Acid aromatic tincture.*

Ph. Borussica, 1847.

℞ Cinnamon . . . . . ℥ij.
Lesser cardamoms,
Cloves,
Galangal root,
Ginger . . . . . āā ℥ss.
Sulphuric acid (sp. gr. 1·845) ℥j.
Rectified spirit (sp. gr. ·897 to ·900) . . . . . ℔ij.

Mix the acid and spirit, and pour them on the other ingredients, reduced to a coarse powder; macerate for 8 days in a close vessel, with frequent agitation, then press it out and strain.

Note.—It should be of a brownish-red colour.

TINCTURA ASSAFŒTIDÆ. *Tincture of assafœtida.*

Lond. Ph. 1851.

℞ Assafœtida, broken into fragments. . . . . ℥v.
Rectified spirit . . . . Oij.

Macerate for 7 days, and strain.

Edin. Ph. 1841.

℞ Assafœtida . . . . . ℥v.
Rectified spirit . . . . . Oij.

Digest for 7 days, and filter the clear liquor.

Dubl. Ph. 1850.

℞ Assafœtida, in small fragments ℥v.
Rectified spirit . . . . Oij.

Macerate for 14 days, strain, express, and filter.

Med. Use.—The same as that of assafœtida itself.

Dose.—♏x. to ʒj.

SYNONYMES.

Tinctura fœtida.—Lond. Ph. 1746.
Tinctura asæ fœtidæ.—Lond. Ph. 1788.

TINCTURA AURANTII. *Tincture of orange peel.*

Lond. Ph. 1851.

℞ Dried peel of orange . . ℥iiiss.
Proof spirit . . . . . Oij.

Macerate for 7 days, then express, and strain.

Edin. Ph. 1841.

℞ Orange-peel, dried . . . ℥iiiss.
Proof spirit . . . . . Oij.

Digest for 7 days, strain, and express strongly, and filter the liquor.

This tincture may be prepared by percolation, by cutting the peel into small fragments, macerating it in a little of the spirit for 12 hours, and beating the mass into a coarse pulp before putting it into the percolator.

Dubl. Ph. 1850.

℞ Bitter orange-peel, dried . . ℥iv.
Proof spirit . . . . . Oij.

Macerate for 14 days, strain, express, and filter.

TINCTURA BALSAMUM PERUVIANI. *Tincture of balsam of Peru.*

Lond. Ph. 1788.

℞ Balsam of Peru. . . . ℥iv.
Rectified spirit . . . . f℥xvj.

Macerate until solution is effected, and strain.

TINCTURA BELLADONNÆ. *Tincture of belladonna.*

Lond. Ph. 1851.

℞ Dried belladonna . . . . ℥iv.
Proof spirit . . . . . Oij.

Macerate for 7 days; then express, and strain.

Dubl. Ph. 1850.

Tinctura foliorum belladonnæ.

℞ Belladonna leaves, dried, and in coarse powder . . . ℥v.
Proof spirit . . . . . Oij.

Macerate for 14 days, strain, express, and filter.

TINCTURA BENZOINI COMPOSITA. *Compound tincture of bènzoin.*

Lond. Ph. 1851.

℞ Coarsely-powdered benzoin . ℥iiiss.
Prepared storax . . . . ℥iiss.
Tolu balsam . . . . . ℥x.
Coarsely-powdered socotrine, or hepatic aloes . . . ℥v.
Rectified spirit . . . . Oij.

Macerate for 7 days, and strain.

Edin. Ph. 1842

℞ Benzoin, in coarse powder . ℥iv.
Peru balsam . . . . . ℥iiss.
East Indian aloes . . . . ℥ss.
Rectified spirit . . . . Oij.

Digest for 7 days, pour off the clear liquor, and filter it.

Med. Use.—Stimulant and antispasmodic; and has been considered useful in chronic catarrh and old asthmatic cases. Also used externally in the treatment of wounds and languid ulcers, which it gently stimulates, and protects also from the air.

Dose.—℥ss. to ℥j.

SYNONYMES.

Balsamum traumaticum. Lond. Ph. 1746.

Wound balsam. Balsam for cuts. Jesuit's drops. Friar's balsam. Torrington's drops. Compound tincture of Benjamin. Traumatic balsam. Commander's balsam.

TINCTURA BUCKU. (E.) *Tinctura buchu.* (D.) *Tincture of buchu.*

Edin. Ph. 1841.

℞ Bucku. . . . . ℥v.
Proof spirit . . . . . Oij.

Digest for 7 days, pour off the clear liquor, and filter it. This tincture may be conveniently and quickly made also by the process of percolation.

Dubl. Ph. 1850.

℞ Bucku leaves, bruised. . . ℥v.
Proof spirit . . . . . Oij.

Macerate for 14 days, strain, express, and filter.

Med. Use.—A stimulating diuretic.
Dose.—℈j. to ℈ij.

Tinctura calami. *Tincture of calamus.*

Ph. Borussica, 1847.

℞ Sweet flag root, sliced . . ℥vj.
Rectified spirit (sp. gr. ·897 to ·930) . . . . . Ibiij.

Pour the spirit on the sweet flag, macerate for 8 days in a close vessel, with frequent agitation, then press it out, and strain.

Note. — It should be of a brownish-yellow colour.

Tinctura calami composita. *Compound tincture of calamus.*

Ph. Hannov. Nova, 1831.

℞ Acorus calamus . . . . ℥iij.
Zedoary,
Ginger . . . . . āā ℥j.
Immature orange-berries . . ℥ij
Rectified spirit . . . . Ibiij.

Macerate, press, and filter.

Tinctura calumbæ. *Tincture of calumba.*

Lond. Ph. 1851.

℞ Thinly-sliced calumba. . . ℥iij.
Proof spirit . . . . . Oij.

Macerate for 7 days; then express, and strain.

Edin. Ph. 1841.

℞ Calumba, in small fragments (if by percolation, in moderately fine powder) . . ℥iij.
Proof spirit . . . . . Oij.

Digest for 7 days, pour off the clear liquor, express the residuum strongly, and filter the liquor. This tincture is much more conveniently prepared by the process of percolation, allowing the powder to be soaked with a little of the spirit for 6 hours before putting it into the percolator.

Dubl. Ph. 1850.

℞ Calumba root, in coarse powder . . . . . ℥v.
Proof spirit . . . . . Oij.

Macerate for 14 days, strain, express and filter.

Med. Use.—The same as the root itself.
Dose.—℈ss. to ℈ij.

Tinctura camphoræ. *Tincture of camphor.*

Edin. Ph. 1841.

℞ Camphor . . . . . ℥iiss.
Rectified spirit . . . . Oij.

Dissolve the camphor in the spirit.

Dubl. Ph. 1850.

Tinctura camphoræ. (Spiritus camphoratus.)

℞ Camphor, in small fragments ℥j.
Rectified spirit . . . . f℥viij.

Dissolve the camphor in the spirit.

Med Use.—A stimulant application in rheumatic pains; for discussing tumours, in the treatment of chilblains, &c.

SYNONYMES.

Spiritus vini camphoratus.—Lond. Ph. 1721.

Spiritus camphoratus. — Lond. Ph. 1788. Dubl. Ph, 1807.

Spirit of camphor.

Tinctura camphoræ composita. *Compound tincture of camphor.*

Lond. Ph. 1851.

℞ Camphor . . . . ℈iiss.
Hard opium, powdered . gr. lxxij.
Benzoic acid . . . . . gr. lxxij.
Oil of anise . . . . f℈j.
Proof spirit . . . . Oij.

Macerate for 7 days, and strain.

Edin. Ph. 1841.

℞ Camphor . . . . . ℈iiss.
Hard opium, powdered . . ℈iv.
Benzoic acid . . . . ℈iv.
Oil of anise . . . . f ʒj.
Proof spirit . . . . . Oij.
Digest for 7 days, and then filter.

Dubl. Ph. 1850.

℞ Opium, in coarse powder,
Benzoic acid, of each . . . ʒiss.
Camphor . . . . . ʒi.
Oil of anise . . . . . f ʒi.
Proof spirit . . . . . Oij.
Macerate for 14 days and strain, express, and filter.

Med. Use.—A sedative in catarrh to allay the tickling cough, after all inflammatory symptoms have disappeared, in chronic asthma and hooping-cough.

Dose.—ʒss. to ʒj.

SYNONYMES.

Elixir paregoricum.—Lond. Ph. 1746.

Tinctura opii camphorata.—Lond. Ph. 1788. *Paregoric elixir.*

Tinctura cannabis indicæ. *Tincture of Indian hemp.*

Dubl. Ph. 1850.

℞ Purified extract of Indian hemp . . . . . ʒss.
Rectified spirit . . . . Oss.
Dissolve the extract in the spirit.

Tinctura cantharidis. *Tincture of cantharides.*

Lond. Ph. 1851.

℞ Cantharides, bruised . . . ʒiv.
Proof spirit . . . . . Oij.
Macerate for 7 days; then express, and strain.

Edin. Ph. 1841.

℞ Cantharides, bruised . . . ʒiv.
Proof spirit . . . . . Oij.
Digest for 7 days, strain, and press; or make it by percolation.

Dubl. Ph. 1850.

℞ Spanish flies, in coarse powder ʒss.
Proof spirit . . . . . Oij.
Macerate for 14 days, strain, express, and filter.

Med. Use.—This possesses a diuretic effect, and is sometimes given in gleet; it is, however, used more as an external application, combined with *camphor liniment*, for the relief of rheumatic pains.

Dose.—Min. x. to ʒj.

SYNONYME.

Tinctura lyttæ.—Lond. Ph. 1809.

Tinctura cantharadis æthereа. *Ethereal tincture of cantharides.*

Soubeiran's Trait. Ph. 1847.

℞ Powdered cantharides . . 1 part.
Acetic ether . . . . 8 parts.
Macerate during 8 days, in a well-stopped bottle; strain with expression, filter. This tincture is an active rubefacient and vesicant.

Tinctura capsici. *Tincture of capsicum.*

Lond. Ph. 1851.

℞ Capsicum, bruised . . . ʒx.
Proof spirit . . . . . Oij.
Macerate for 7 days; then express and strain.

Edin. Ph. 1841.

℞ Capsicum, bruised . . . ʒx.
Proof spirit . . . . . Oij.
Macerate for 7 days, strain, and press; or by percolation.

Dubl. Ph. 1850.

℞ Cayenne pods, bruised . . ʒiss.
Proof spirit . . . . . Oj.
Macerate for 14 days, strain, express, and filter.

Med. Use.—A useful stimulant where typhoid symptoms prevail,—in cynanche maligna.

Dose.—♏x. to ʒj. or more.

Tinctura capsici concentrata.

Dr. Turnbull.

℞ Capsicums . . . . . ℥iv.
Rectified spirit . . . . . ℥xij.
Macerate for 7 days, and strain.

Tinctura capsici concentrata cum veratria.

Dr. Turnbull.

℞ Veratria . . . . . grs. iv.
Concentrated tincture of capsicum . . . . . ℥j.
Mix.

Tinctura cardamomi. *Tincture of cardamom.*

Edin. Ph. 1841.

℞ Seeds of cardamoms, bruised ℥ivss.
Proof spirit . . . . . Oij.
Digest for 7 days, strain, squeeze the residuum, and filter the liquors. This tincture may be better prepared by the process of percolation, in the same way as the tincture of capsicum, the seeds being first ground in a coffee-mill.

Med. Use.—As an adjunct to other preparations, for its carminative and stimulant properties.

Dose.—℥j. or more.

SYNONYME.

Tinctura amomi repentis.—Edin. Ph. 1839.

Tinctura cardamomi composita. *Compound tincture of cardamoms.*

Lond. Ph. 1851.

℞ Bruised cardamom,
Bruised caraway,
Bruised cochineal, of each . ℥iiss.
Bruised cinnamon. . . . ℥v.
Stoned raisin . . . . . ℥v.
Proof spirit . . . . . Oij.
Macerate for 7 days; then express, and strain.

Edin. Ph. 1841.

℞ Cardamoms,
Caraway, āā, bruised . . . ℥iiss.
Cochineal, powdered . . . ℥j.
Cinnamon, bruised . . . ℥v.
Raisins [stoned] . . . . ℥v.
Proof spirit . . . . . Oij.
Digest for 7 days, strain, express strongly the residuum, and filter the liquors.

This tincture may be also prepared by the method of percolation, if the solid materials be first beat together, moistened with a little spirit, and left thus for 12 hours before being put into the percolator.

Med. Use.—Serviceable to correct the griping effects of bitter effusions.

Dose.—℥j. or more.

Dubl. Ph. 1850.

℞ Cardamom seeds, bruised,
Caraway seeds, bruised, of each ℥ss.
Cinnamon, bruised . . . ℥j.
Cochineal, in powder . . . ℥ij.
Proof spirit . . . . . Oiij.
Macerate for 14 days, strain, express, and filter.

SYNONYME.

Tinctura stomachica.—Lond. Ph. 1746.

Tinctura cascarillæ. *Tincture of cascarilla.*

Lond. Ph. 1851.

℞ Cascarilla, bruised . . . ℥v.
Proof spirit . . . . . Oij.
Macerate for 7 days; then express, and strain.

Edin. Ph. 1841.

℞ Cascarilla, in moderately fine powder . . . . . ℥v.
Proof spirit . . . . . Oij.
Proceed by percolation or digestion, as afterwards directed for tincture of cinchona.

Dubl. Ph. 1850.

℞ Cascarilla bark, in coarse powder ℥v.
Proof spirit . . . . . Oij.

Macerate for 14 days, strain, express, and filter.

Med. Use.—Same as of the bark.

Dose.—ʒj. to ʒij.

SYNONYME.

Tinctura crotonis eleutheriæ.—Edin. Ph. 1839.

Tinctura cassiæ. *Tincture of cassia.*

Edin. Ph. 1841.

℞ Cassia, in moderately fine powder . . . . . ℥iiiss.
Proof spirit . . . . Oij.

Digest for 7 days, strain, express the residuum strongly, and filter. The tincture is more conveniently made by the process of percolation, the cassia being allowed to macerate in a little of the spirit for 12 hours before being put into the percolator.

Dose.—ʒj. to ʒij.

Tinctura castorei. *Tincture of castor.*

Lond. Ph. 1836, and Edin. Ph. 1841.

℞ Castor, powdered . . . ℥iiss.
Rectified spirit . . . . Oij.

Macerate for 7 days, then express and strain. (Lond.)

This tincture may be prepared either by digestion or percolation, like the tincture of cassia. (Edin.)

Med. Use.—Antispasmodic.

Dose.—f ʒss to ʒj.

SYNONYME.

Tinctura castorei rossici.—Dubl. Ph. 1826.

Tinctura castoræi ætherea. *Ethereal tincture of castor.*

Ph. Borussica, 1847.

℞ Castor, dried, and reduced to a coarse powder . . ℥j.
Spirit of ether . . . . ℥ix.

Macerate for 8 days in a well-stopped glass vessel, with occasional agitation, then press it out and strain.

Note.—It should be of a brownish colour.

Tinctura castorei ammoniata. *Ammoniated tincture of castor.*

Edin. Ph. 1841.

℞ Castor, bruised . . . ℥iiss.
Assafœtida, in small fragments . . . . . ʒx.
Spirit of ammonia . . . Oij.

Digest for 7 days in a well-closed vessel, strain and express strongly the residuum; and filter the liquor. This tincture cannot be so conveniently prepared by the method of percolation.

Med. Use.—Antispasmodic.

Dose.—f ʒss to ʒj.

Tinctura catechu. *Tincture of catechu.*

Edin. Ph. 1841.

℞ Catechu, in moderately-fine powder . . . . . ℥iiiss.
Cinnamon, in fine powder . ℥iiss.
Proof spirit. . . . . Oij.

Digest for 7 days; strain and express strongly the residuum; filter the liquors. This tincture may be also prepared by the process of percolation, the mixed powders being put into the percolator without being previously moistened with the spirit.

Dubl. Ph. 1850.

℞ Catechu, in coarse powder . ℥iv.
Cinnamon, bruised . . . ℥ij.
Proof spirit . . . . Oij.

Macerate for 14 days; strain, express, and filter.

Med. Use.—As an astringent in diarrhœa.

Dose.—ʒj or more.

SYNONYME.

Tinctura Japonica.—Lond. Ph. 1746.

Tinctura catechu composita. *Compound tincture of catechu.*

Lond. Ph. 1851.

℞ Powdered catechu . . . ℥iiiss.
Bruised cinnamon . . . ℥iiss.
Proof spirit . . . . Oij.

Macerate for 7 days, then express, and strain.

Tinctura chinæ composita. *Elixir roborans Roberti Whyttii. Compound tincture of crown or loxa bark.*

Ph. Borussica, 1847.

℞ Crown or loxa bark, coarsely powdered. . . . . ℥iij.
Gentian root, sliced,
Orange-peel, freed from the white internal parenchyma, sliced . . āā ℥j.
Rectified spirit (sp. gr. ·835.) ℥xvj.
Cinnamon water . . . ℥viij.

Mix the spirit and water, and pour them on the other ingredients; macerate for 8 days in a close vessel, with frequent agitation, then press it out and strain.

Note.—It should be of a reddish-brown colour.

Tinctura chirettæ. *Tincture of chirayta.*

Dubl. Ph. 1850.

℞ Chiretta, bruised . . . ℥v.
Proof spirit . . . . Oij.

Macerate for 14 days; strain, express, and filter.

Dose.—℥j to ℥ij.

Tinctura cinchonæ. *Tincture of cinchona.*

Lond. Ph. 1851.

℞ Yellow cinchona, bruised . ℥viij.
Proof spirit. . . . . Oij.

Macerate for 7 days, then express, and strain.

Edin. Ph. 1841.

℞ Yellow bark, in fine powder (or of any other species of cinchona, according to prescription) ℥viij.
Proof spirit. . . . . Oij.

Percolate the bark with the spirit, the bark being previously moistened with a very little spirit, left thus for 10 or 12 hours, and then firmly packed in the cylinder. This tincture may also be prepared, though much less expeditiously, and with much greater loss, by the usual process of digestion, the bark being in that case reduced to coarse powder only.

Dubl. Ph. 1850.

℞ Peruvian bark (crown or pale), in coarse powder . ℥iv.
Proof spirit. . . . . Oij.

Macerate for 14 days; strain, express, and filter.

Med. Use.—Similar to that of the bark.

Dose.—From ℥j to ℥ij.

SYNONYME.

Tinctura corticis Peruviani simplex.—Lond. Ph. 1746.

Tinctura cinchonæ pallidæ *Tincture of pale cinchona.*

Lond. Ph. 1851.

Prepare this in the same manner as it is directed concerning the tincture of cinchona.

Tinctura cinchonæ ammoniata. *Ammoniated tincture of cinchona.*

Lond. Ph. 1824.

℞ Lance-leaved cinchona bark, in powder . . . . ℥iv.
Aromatic spirit of ammonia ℥xxxij.

Macerate for 10 days and filter.

Tinctura cinchonæ composita. *Compound tincture of cinchona.*

Lond. Ph. 1851, and Edin. Ph. 1841.

℞ Lance-leaved cinchona, bruised . . . . . ℥iv.
Orange-peel, dried . . . ℥iij.
Serpentary, bruised. . . ʒvj.
Saffron . . . . . ʒij.
Cochineal, powdered . . ʒj.
Proof spirit. . . . . Oij.

Macerate for 7 days, then express and strain. (Lond.)

Digest for 7 days, strain, and press; or it may be made by percolation. (Edin.)

Dubl. Ph. 1850.

℞ Peruvian bark (crown or pale), in coarse powder . ℥iv.
Bitter orange-peel, dried . ℥ij.
Virginia snake-root, bruised ʒvj.
Saffron, chopped fine . . ʒij.
Cochineal, in powder . . ʒj.
Proof spirit. . . . . Oij.

Macerate for 14 days; strain, express, and filter.

Use, Dose, &c.—The same as of the preceding.

SYNONYMES.

Tinctura corticis Peruviani composita.—Lond. Ph. 1788.

Huxham's tincture of bark.

Tinctura cinnamomi. *Tincture of cinnamon.*

Lond. Ph. 1851, and Edin. Ph. 1841.

℞ Cinnamon bark, bruised . ℥iiiss.
Proof spirit. . . . . Oij.

Macerate for 7 days, then express, and strain. (Lond. and Dubl.)

Proceed by percolation, or digestion, as directed for tincture of cassia. (Edin.)

Med. Use.—Stomachic, and frequently combined with chalk mixture or bitter tonic infusions, in diarrhœa, and other diseases of debility.

Dose.—ʒj to ʒiij.

Tinctura cinnamomi composita. *Compound tincture of cinnamon.*

Lond. Ph. 1851.

℞ Cinnamon, bruised . . . ℥j.
Cardamoms, bruised . . ℥ss.
Long pepper, powdered,
Ginger, sliced . . . āā ʒiiss.
Proof spirit. . . . . Oij.

Macerate for 7 days, then express, and strain.

Edin. Ph. 1841.

℞ Cinnamon, in coarse powder (fine, if percolation be followed),
Cardamom seeds, bruised āā ℥j.
Long pepper, ground finely. ʒiij.
Proof spirit. . . . . Oij.

The tincture is best prepared by the method of percolation as directed for the compound tincture of cardamom. But it may also be made in the ordinary way by digestion for 7 days, straining and expressing the liquor, and then filtering it.

Dubl. Ph. 1850.

℞ Cinnamon, bruised . . . ℥ij.
Cardamom seeds, bruised . ℥ij.
Ginger, bruised. . . . ℥ss.
Proof spirit. . . . . Oij.

Macerate for 14 days; strain, express, and filter.

Use and Dose.—The same as of the preceding.

SYNONYME.

Tinctura aromatica.—Lond. Ph. 1746.

Tinctura cocci cacti. *Tincture of cochineal.*

Dubl. Ph. 1850.

℞ Cochineal, in fine powder . ℥ij.
Proof spirit. . . . . Oij.

Macerate for 14 days; strain, express, and filter.

TINCTURA COLCHICI. *Tincture of colchicum.*

Lond. Ph. 1851.

℞ Bruised seed of colchicum . ℥v.
Proof spirit. . . . . Oij.

Macerate for 7 days, then express and strain.

Edin. Ph. 1841.

℞ Colchicum seeds, ground finely in a coffee-mill . ℥v.
Proof spirit. . . . . Oij.

This tincture is to be prepared like the tincture of cinchona; and percolation is much more convenient and speedy than digestion.

Dubl. Ph. 1850.

Tinctura seminum colchici.

℞ Colchicum seeds, bruised . ℥v.
Proof spirit. . . . . Oij.

Macerate for 14 days; strain, express, and filter.

Ph. Borussica, 1847.

Tinctura seminis colchici.

℞ Meadow saffron seeds, coarsely powdered . . ℥v.
Rectified spirit (sp. gr. ·897 to ·900) . . . . . Ibij.

Pour the spirit on the seeds; macerate for 8 days in a close vessel, with frequent agitation; then press it out, and strain.

Note.—It should be of a brownish colour.

Med. Use.—The same as that of the cormus.

Dose.—Min. x. to f ʒss.

TINCTURA COLCHICI COMPOSITA. *Compound tincture of colchicum.*

Lond. Ph. 1851.

℞ Bruised seed of colchicum . ℥v.
Aromatic spirit of ammonia Oij.

Macerate for 7 days, then express, and strain.

Use and Dose.—The same as of the preceding.

SYNONYME.

Spiritus colchici ammoniatus.—Lond. Ph. 1824.

TINCTURA COLOCYNTHIDIS. *Tincture of colocynth.*

Ph. Borussica, 1847.

℞ Colocynth freed from the seeds, sliced . . . . ℥j.
Aniseed, bruised . . . ʒj.
Rectified spirit (sp. gr. ·835) Ibj.

Pour the spirit on the other ingredients; macerate for 8 days in a close vessel, with frequent agitation; then press it out, and strain, and preserve it carefully.

Note.—It should be of a brownish-yellow colour.

TINCTURA CONII. *Tincture of hemlock.*

Lond. Ph. 1851.

℞ Hemlock leaves, dried . . ℥v.
Proof spirit. . . . . Oij.

Macerate for 7 days, then express and strain.

Edin. Ph. 1841.

℞ Fresh leaves of conium . ℥xij.
Tincture of cardamom . . Oss.
Rectified spirit . . . . Oiss.

Bruise the hemlock leaves; express the juice strongly; bruise the residuum; pack it firmly in a percolator; transmit first the tincture of cardamom and then the rectified spirit, allowing the spirituous liquors to mix with the expressed juice as they pass through. Add gently water enough to the percolator for pushing through the spirit remaining in the residuum. Filter the liquor after agitation.

Ph. Borussica, 1847.

℞ Hemlock, fresh. . . . Ibj.
Rectified spirit (sp gr. ·835) Ibj.

Bruise the hemlock in a stone mortar,

and add the spirit; macerate for 4 days in a close vessel, with frequent agitation, then press it out and strain, and preserve it carefully.

Note.—It should be of a brownish-green colour.

Med. Use.—The same as the herb itself.

Dose.—That prepared according to the Lond. Ph. and the Dubl. Ph. may be given in doses of ʒss to ʒj, until some effect is produced. The Edin. Ph. preparation must be employed more cautiously, as the fresh herb is used. Drying generally deteriorates the activity of the herb.

Tinctura crotonis. *Tincture of croton oil.*

Soubeiran.

℞ Croton oil . . . . gtt. viij.
Rectified spirit . . . fʒiv.
Mix.

Tinctura croci. *Tincture of saffron.*

Edin. Ph. 1841.

℞ Saffron, chopped fine . . ʒij.
Proof spirit. . . . . Oij.

This tincture is to be prepared like tincture of cinchona, either by percolation or by digestion, the former method being the more convenient and expeditious.

Dubl. Ph. 1850.

℞ Saffron, chopped fine . . ʒij.
Proof spirit. . . . . Oj.

Macerate for 14 days; strain, express, and filter.

Med. Use.—Generally employed as a colouring liquid, but sometimes as a stimulant and emmenagogue.

Dose.—fʒj to ʒij.

Tinctura cubebæ. *Tincture of cubeb.*

Lond. Ph. 1851.

℞ Powdered cubeb . . . ℔j.
Proof spirit. . . . . Oij.

Macerate for 7 days, then express and strain.

Dubl. Ph. 1850.

℞ Cubebs, bruised . . . ʒv.
Rectified spirit . . . . Oij.

Macerate for 14 days; strain, express, and filter.

Med. Use.—Given in gonorrhœa.

Dose.—ʒj to ʒij three times a-day.

Tinctura cusparIæ. *Tincture of cusparia.*

Edin. Ph. 1841.

℞ Cusparia, in moderately-fine powder . . . . . ʒivss.
Proof spirit. . . . . Oij.

This tincture is to be made like the tincture of cinchona, and most expeditiously by the percolation.

Tinctura digitalis. *Tincture of foxglove.*

Lond. Ph. 1851.

℞ Foxglove leaves, dried . . ʒiv.
Proof spirit . . . . . Oij.

Macerate for 7 days, then express and strain.

Edin. Ph. 1841.

℞ Digitalis, in moderately-fine powder . . . . . ʒiv.
Proof spirit . . . . . Oij.

This tincture is best prepared by the process of percolation, as directed for the tincture of capsicum. If 40 fluidounces of spirit be passed through, the density is 944, and the solid contents of a fluidounce amount to 24 grains. It may also be made by digestion.

Dubl. Ph. 1850.

℞ Foxglove leaves, dried, and in coarse powder . . . . ʒv.
Proof spirit . . . . . Oij.

Macerate for 14 days, strain, express, and filter.

Dose.—Min. x. cautiously increased to min. xl.

Tinctura digitalis ætherea. *Ethereal tincture of digitalis.*

Soubeiran's Trait. Ph. 1847.

℞ Leaves of digitalis purpurea 1 part.
Sulphuric ether . . . 4 parts.

Proceed by percolation in a closed funnel.

This tincture, which is generally considered as very effectual, is, on the contrary, regarded by some practitioners as possessing merely the properties peculiar to ether.

Tinctura ergotæ. *Tincture of ergot of rye.*

Dubl. Ph. 1850.

℞ Ergot of rye in coarse powder ℥viij.
Proof spirit . . . . . Oij.

Macerate for 14 days, strain, express, and filter.

Tinctura ergotæ ætherea. *Ethereal tincture of ergot of rye.*

Lond. Ph. 1851.

℞ Ergot, bruised . . . . ℥xv.
Ether . . . . . Oij.

Macerate for 7 days, then express and strain.

Tinctura euphorbiæ. *Tincture of euphorbium.*

Codex, Ph. Franç., 1839.

℞ Euphorbium . . . . 1 part.
Rectified spirit . . . . 4 parts.

Macerate for 15 days, and strain.

Tinctura ferri acetatis. *Tincture of acetate of iron.*

Dubl. Ph. 1850.

℞ Sulphate of iron . . . ℥viij.
Distilled water . . . Oss.
Pure sulphuric acid . . f℥vj.
Pure nitric acid . . . f℥ss.
Acetate of potash . . . ℥viij.
Rectified spirit . . . . Cong. ss.

To 9 ounces of the water add the sulphuric acid, and in the mixture, with the aid of heat, dissolve the sulphate of iron. Add next the nitric acid, first diluted with the remaining ounce of water, and evaporate the resulting solution to the consistence of a thick syrup. Dissolve this in 1 quart, and the acetate of potash in the remainder of the spirit, and, having mixed the solutions, and shaken the mixture repeatedly in a large bottle, let the whole be thrown upon a calico filter. When any further liquid ceases to trickle through, subject the filter, with its contents, to expression, and, having cleared the turbid tincture thus procured by filtration through paper, let it be added to that already obtained.

The specific gravity of this tincture is 891.

Med. Use.—This same as the ferruginous compounds generally.

Dose.—♏ v. to ♏ x. in some aromatic water.

Tinctura ferri acetici ætherea. *Ethereal tincture of acetate of iron.*

℞ Solution of acetate of iron . ℥ix.
Rectified spirit (sp. gr. ·835) . ℥ij.
Acetic ether (sp. gr. ·890.) . ℥j.

Mix.

Note.—It should be clear, of a brown colour, sp. gr. 1·065 to 1·070.

Ph. Castr. Ruthena, 1840.

℞ Moist and recently-precipitated hydrated oxide of iron . . . . . 1 part.
Acetic acid . . . . . 3 parts.

Dissolve, and add to 9 parts of this,

Acetic ether . . . . 1 part.
Rectified spirit . . . . 2 parts.

Mix.

Tinctura ferri ammonio chloridi. *Tincture of ammonio chloride of iron.*

Lond. Ph. 1851.

℞ Ammonio chloride of iron . ℥iv.
Proof spirit,
Distilled water, of each . . Oj.
Dissolve and strain.

A fluidounce of this, potash being added, throws down 5·8 grains of sesquioxide of iron.

Tinctura ferri sesquichloridi. *Tincture of sesquichloride of iron.*

Lond. Ph. 1851.

℞ Sesquioxide of iron . . . ℥vj.
Hydrochloric acid. . . . Oj.
Rectified spirit . . . . Oiij.
Mix the sesquioxide with the acid, and digest in a sand-bath, frequently shaking, until it may be dissolved. Afterward add the spirit to the cooled liquor, and strain.

The specific weight of this is ·992. A fluidounce of the same throws down nearly 30 grains of sesquioxide of iron, on potash being added.

Edin. Ph. 1841.

Muriatis ferri liquor.

℞ Red oxide of iron . . . . ℥vj.
Muriatic acid (commercial) . Oj.
Rectified spirit . . . . Oiij.
Add the oxide to the acid in a glass vessel; digest with a gentle heat, and occasional agitation, for a day, or till most of the oxide be dissolved; then add the spirit, and filter.

Note.—Solution of sesquichloride of iron in rectified spirit. Tincture of iron.

Dubl. Ph. 1850.

Tinctura ferri sesquichloridi.

℞ Iron wire . . . . . ℥viij.
Pure muriatic acid . . . Oij.
Pure nitric acid . . . f ℥xviij.
Distilled water . . . . Oj.
Rectified spirit . . . . Oiss.
Dilute the muriatic acid with the water, and, having poured the mixture on the iron, apply a gentle heat until the metal is dissolved. Next add the nitric acid in successive portions, and then evaporate at a gentle heat until the solution is reduced to 1 pint. Finally, mix this in a bottle with the spirit, and after the mixture has stood for 12 hours, draw off the clear tincture.

The specific gravity of this tincture is 1237.

Med. Use.—Tonic.

Dose.—♏ x. to ♏ xxx. twice a-day.

SYNONYMES.

Tinctura maris cum spiritu solis.—Lond. Ph. 1721.

Steel drops.

Tinctura ferri muriatica ætherea. *Ethereal tincture of muriate of iron.*

Ph. Castr. Ruthena, 1840.

℞ Solution of muriate of iron 1 part.
Rectified spirit . . . . 2 parts.
Sulphuric ether . . . . 2 parts.
Macerate the solution of muriate of iron and rectified spirit together for 2 days, then add the sulphuric ether.

Tinctura fuliginis. *Tincture of soot.*

Lond. Ph. 1746.

℞ Soot from wood . . . ℥ij.
Assafœtida . . . . . ℥j.
Proof spirit . . . . f ℥xxxij.
Macerate and strain.

Tinctura gallæ. *Tincture of galls.*

Lond. Ph. 1851, and Edin. Ph. 1841.

℞ Galls, bruised. . . . . ℥v.
Proof spirit . . . . . Oij.
Macerate for 7 days, then express and strain. (Lond.)

This tincture may be prepared either by digestion or percolation, as directed for tincture of capsicum. (Edin.)

Dubl. Ph. 1850.

℞ Galls, in fine powder . . . ℥v.
Proof spirit . . . . Oij.

Macerate for 14 days; strain, express, and filter.

Med. Use.—A powerful astringent.

Dose.—f℥ss. to f℥ij.

Tinctura galbani. *Tincture of galbani.*

Dubl. Ph. 1826.

℞ Galbanum, cut very small . ℥ij.
Proof spirit . . . . . Oij.

Digest for 7 days, and filter.

Med. Use. — Stimulant and antispasmodic.

Dose.—℥j. to ℥ij.

Ph. Borussica, 1847.

℞ Galbanum, bruised . . . ℥ij.
Rectified spirit (sp. gr. ·835). ℔j.

Macerate in a close vessel for 4 days, frequently shaking, and strain.

Note. — It should be of a brownish colour.

Tinctura gentianæ composita. *Compound tincture of gentian.*

Lond. Ph. 1851.

℞ Gentian, sliced . . . . ℥iiss.
Orange-peel, dried. . . . ℥x.
Cardamoms, bruised . . . ℥v.
Proof spirit . . . . . Oij.

Macerate for 7 days; then express and strain.

Edin. Ph. 1841.

℞ Gentian, sliced and bruised ℥iiss.
Dried bitter orange-peel, bruised . . . . ℥x.
Canella, in moderately fine powder . . . . . ℥vj.
Cochineal, bruised . . . ℥ss.
Proof spirit. . . . . Oij.

Digest for 7 days; strain and express strongly; and then filter the liquor.

This tincture may be more conveniently prepared by percolation, as directed for the compound tincture of cardamom.

Dubl. Ph. 1850.

℞ Gentian root, bruised . . . ℥iij.
Bitter orange-peel, dried . . ℥iss.
Cardamom seeds, bruised . . ℥ss.
Proof spirit . . . . . Oij.

Macerate for 14 days, strain, express, and filter.

Med. Use.—An elegant form of bitter.

Dose.—f ℥j. to ℥iij.

SYNONYME.

Tinctura amara.—Lond. Ph. 1749.

Tinctura guaiaci. *Tincture of guaiacum.*

Edin. Ph. 1841.

℞ Guaiacum resin, bruised . . ℥vij.
Rectified spirit . . . . Oij.

Macerate for 14 days, and strain. (Lond.)

Digest for 7 days, and strain. (Edin.)

Dubl. Ph. 1850.

℞ Guaiac resin, in fine powder . ℥viij.
Rectified spirit. . . . . Oij.

Macerate for 14 days; strain, express, and filter.

Med. Use.—This is a powerful sudorific in rheumatic and arthritic cases.

Dose.—f℥j. to f℥iij. in mucilage or milk.

Tinctura guaiaci composita. *Compound tincture of guaiacum.*

Lond. Ph. 1851.

℞ Guaiacum resin, bruised . . ℥vij.
Aromatic spirit of ammonia . Oij.

Macerate for 7 days, and strain.

Edin. Ph. 1841. *Tinctura guaiaci ammoniata.*

℞ Guaiac, in coarse powder . . ℥vij.
Spirit of ammonia. . . . Oij.

Digest for 7 days, in a well-closed vessel, and then filter the liquor.

Med. Use.—A powerfully stimulating sudorific and emmenagogue.

Dose.—ʒss. to ʒij. may be taken as the preceding.

SYNONYMES.

Tinctura guaiacini volatilis.—Lond. Ph. 1746.

Tinctura guaiaci.—Lond. Ph. 1788.

Tinctura hellebori. *Tincture of hellebore.*

Lond. Ph. 1851.

℞ Hellebore, bruised . . . ʒv.
Proof spirit . . . . . Oij.

Macerate for 7 days; then express and strain.

Med. Use.—In uterine obstructions. Where chalybeates are contraindicated, it is said to possess great powers in exciting the menstrual evacuations.

Dose.—f ʒss. to f ʒj. twice a-day in any convenient vehicle.

SYNONYMES.

Tinctura melampodii.—Lond. Ph. 1746.

Tinctura hellebori nigri.—Lond Ph. 1788.

Tinctura hibisci abelmoschi. *Tincture of musk seeds.*

Dr. Reece.

℞ Seeds of Hibiscus abelmoschus ʒij.
Proof spirit . . . . . f ʒxvj.

Macerate for 14 days, and strain.

Tinctura hyoscyami. *Tincture of henbane.*

Lond. Ph. 1851.

℞ Henbane leaves, dried . . . ʒv.
Proof spirit . . . . . Oij.

Macerate for 7 days; then express and strain.

Dubl. Ph. 1850.

℞ Henbane leaves, dried, and in coarse powder . . . . ʒv.
Proof spirit . . . . . Oij.

Macerate for 14 days, strain, express, and filter.

Edin. Ph. 1841.

℞ Hyoscyamus, dried, and in moderately-fine powder . ʒv.
Proof spirit . . . . . Oij.

This tincture is best prepared by the process of percolation, as directed for tincture of capsicum; but it may also be obtained, though with greater loss, by the process of digestion.

Med. Use.—An anodyne.

Dose.—ʒss. to ʒj.

Tinctura inulæ. *Tincture of elecampane.*

Codex, Ph. Franç., 1839.

℞ Powdered elecampane . . . ʒiv.
Proof spirit . . . . . Oj.

Digest for 15 days, and strain.

Tinctura ipecacuanhæ. *Tincture of ipecacuanha.*

Ph. Borussica, 1847.

℞ Ipecacuanha root, coarsely powdered . . . . . ʒj.
Rectified spirit (sp. gr. ·897 to ·900) . . . . . ʒviij.

Pour the spirit on the root; macerate for 8 days in a close vessel, with frequent agitation, then press it out and strain.

Note.—It should be of a yellowish-brown colour.

Tinctura iodinii. *Tincture of iodine.*

Edin. Ph. 1841.

℞ Iodine . . . . . ʒiiss.
Rectified spirit . . . . Oij.

Dissolve the iodine in the spirit with the aid of a gentle heat and agitation; keep the tincture in well-closed bottles.

Ph. Borussica, 1847.

Tinctura iodi.

℞ Iodine . . . . . gr. xlviij.
Rectified spirit (sp. gr. ·835) . . . . . ʒj.

Dissolve the iodine, pour off the tincture, and keep it carefully in a well-stopped glass vessel.

Note.—It should be of a reddish-brown colour.

Tinctura iodinii composita. *Compound tincture of iodine.*

Lond. Ph. 1851.

℞ Iodine	ʒj.
Iodide of potassium	ʒij.
Rectified spirit	Oij.

Macerate till they are dissolved, and strain.

Dubl. Ph. 1850.

℞ Pure iodine	ʒss.
Iodide of potassium	ʒj.
Rectified spirit	Oj.

Dissolve the iodine and iodide of potassium in the spirit.

Dose.—Min, x. to xx.

Tinctura iridis. *Tincture of iris. Eau de violettes.*

Soubeiran's Trait. Ph. 1847.

℞ Florentine iris, powdered	1 part.
Alcohol, at ·842 sp. gr.	8 parts.

Macerate for 15 days, and strain.

Tinctura jalapæ. *Tincture of jalap.*

Lond. Ph. 1851.

℞ Coarse powdered jalap	ʒv.
Proof spirit	Oij.

Macerate for 7 days; then express and strain.

Edin. Ph. 1841.

℞ Jalap, in moderately fine powder	ʒvij.
Proof spirit	Oij.

This tincture may be prepared either by digestion or percolation, as directed for tincture of cinchona.

Dubl. Ph. 1850.

℞ Jalap root, in coarse powder	ʒv.
Proof spirit	Oiss.

Macerate for 14 days, strain, express, and filter.

Med. Use.—The same as jalap itself.

Dose.—f ʒj. to f ʒiv.

Tinctura kino. *Tincture of kino.*

Lond. Ph. 1851, and Edin. Ph. 1841.

℞ Kino, bruised	ʒiiiss.
Rectified spirit	Oij.

Macerate for 7 days, and strain. (Lond.) Digest for 7 days, and then filter. This tincture cannot be conveniently prepared by the process of percolation. (Edin.)

Med. Use.—An astringent tincture, and useful in diarrhœa.

Dose.—ʒj. to ʒij.

Tinctura krameriæ. *Tincture of rhatany.*

Dubl. Ph. 1850.

℞ Rhatany root, in coarse powder	ʒviij.
Proof spirit	Oij.

Macerate for 14 days, strain, express, and filter.

U. S. Ph. 1850.

℞ Rhatany, in powder	ʒvj.
Diluted alcohol	Oij.

Macerate for 14 days, express, and filter through paper.

This tincture may also be prepared by moistening the rhatany thoroughly with diluted alcohol, allowing it to stand for 48 hours; then transferring it to a percolator, and gradually pouring upon it diluted alcohol until 2 pints of filtered liquor are obtained.

Tinctura laccæ.

Codex Medic. Hamberg. 1845.

℞ Shell lac	ʒj.
Alum	ʒiss.
Rose water	ʒj.
Sage water	ʒj.
Spirit of scurvy grass	ʒss.
Water	ʒvii

Boil the shell-lac and alum in the water down to ℥iij., then strain the liquor, and add the other ingredients.

Tinctura lactucarii. *Tincture of lactucarium.*

Edin. Ph. 1841.

℞ Lactucarium, in fine powder . ℥iv.
Proof spirit . . . . . Oij.

This tincture is best prepared by percolation, as directed for tincture of myrrh; but may also be prepared by digestion with coarse powder of lactucarium.

Dose.—From min. xx. to f℥j.

Tinctura lavandulæ composita. *Compound tincture of lavender.*

Lond. Ph. 1851.

℞ Oil of lavender . . . . fʒiss.
Oil of rosemary . . . . ♏x.
Bruised cinnamon,
Bruised nutmeg, of each . ʒiiss.
Sliced logwood . . . . ʒv.
Rectified spirit . . . . Oij.

Macerate the cinnamon, nutmeg, and logwood, in the spirit, for 7 days; then express and strain, and dissolve the oils in the strained tincture.

Dubl. Ph. 1850.

℞ Oil of lavender . . . . fʒiij.
Oil of rosemary . . . . fʒj.
Cinnamon, bruised . . . ℥j.
Nutmeg, bruised . . . . ℥ss.
Cloves, bruised
Cochineal, in powder, of each ʒij.
Rectified spirit . . . . Oij.

Macerate for 14 days; strain, express, and filter.

Med. Use.—Used as a cordial and stomachic to relieve nausea, flatulence, lowness of spirits, &c.

Dose.—Min. xxx. to fʒij. in water, or dropped on sugar.

SYNONYMES.

Spiritis lavendulæ compositus matthiæ.—Lond. Ph. 1721.

Tinctura lavendulæ compositus.—Lond. Ph. 1788.

Lavender drops. Red lavender drops.

Tinctura ligni guaiaci. *Tincture of guaiacum wood.*

Ph. Borussica, 1847.

℞ Guaiacum, rasped . . . ℥iij.
Sassafras . . . . . ℥ij.
Rhodium wood . . . . ℥ss.
Red sandal wood . . . . ℥j.
Yellow sandal wood . . . ℥j.
Rectified spirit . . . . ℔ij.

Macerate for 8 days, and strain.

Tinctura limonum. *Tincture of lemons.*

Lond. Ph. 1851.

℞ Fresh peel of lemons . . . ℥iiiss.
Proof spirit . . . . . Oij.

Macerate for 7 days; then express and strain.

Dubl. Ph. 1850.

Tinctura limonis.

℞ Fresh lemon peel, cut thin . ℥v.
Proof spirit . . . . . Oj.

Macerate for 14 days; strain, express and filter.

Tinctura lobeliæ. *Tincture of lobelia.*

Lond. Ph. 1851.

℞ Powdered lobelia . . . . ℥v.
Proof spirit . . . . . Oij.

Macerate for 7 days; then express and strain.

Edin. Ph. 1841.

℞ Lobelia, dried, and in moderately-fine powder . . . ℥v.
Proof spirit . . . . . Oij.

This tincture is best prepared by the process of percolation, as directed for tincture of capsicum; but it may also be made in the usual way, by digestion.

Dubl. Ph. 1850.

℞ Lobelia, dried, and in coarse powder . . . . . ℥v.
Proof spirit . . . . . Oij.

Macerate for 14 days; strain, express, and filter.

U. S. Ph. 1850.

℞ Lobelia, the herb . . . . ℥iv.
Diluted alcohol . . . . Oij.

Macerate for 14 days; express, and filter through paper.

This tincture may also be prepared by thoroughly moistening the lobelia in powder, with diluted alcohol, allowing it to stand for 24 hours, then transferring it to a percolator, and gradually pouring upon it diluted alcohol until 2 pints of filtered liquor are obtained.

Ph. Borussica, 1847.

℞ Indian tobacco, cut small . . ℥j.
Rectified spirit (sp. gr. ·897 to ·900) . . . . . ℥vj.

Pour the spirit on the tobacco; macerate for 8 days in a close vessel, with frequent agitation, then press it out and strain.

Note.—It should be of a greenish-brown colour.

Dose.—As an emetic and antispasmodic, from f℥j. to f℥ij. repeated every 2 or 3 hours, until vomiting occur; as an expectorant, ♏x. to f℥j. of the weakest of the above preparations.

Tinctura lobeliæ ætherea. *Ethereal tincture of lobelia.*

Lond. Ph. 1851.

℞ Powdered lobelia . . . ℥v.
Ether . . . . . ℥xiv.
Rectified spirit . . . . f℥xxvj.

Macerate for 7 days; then express and strain.

Edin. Ph. 1841.

℞ Dry lobelia, in moderately-fine powder . . . . . ℥v.
Spirit of sulphuric æther . . Oij.

This tincture is best prepared by percolation, as directed for tincture of capsicum; but it may be also obtained by digestion in a well-closed vessel for 7 days.

Whitlaw.

℞ Lobelia inflata . . . . lbj.
Rectified spirit . . . . Oiv.
Spirit of nitrous ether . . Oiv.
Ether . . . . . ℥iv.

Macerate for 14 days, and strain.

Med. Use.—These may be used in nearly the same doses as the alcoholic tincture, but not exceeding f℥j.

Tinctura lupuli. *Tincture of hops.*

Lond. Ph. 1851.

℞ Hops . . . . . ℥vj.
Proof spirit . . . . . Oij.

Macerate for 7 days; then express and strain.

Edin. Ph. 1841.

℞ Any convenient quantity of hops recently dried; separate by friction and sifting the yellowish-brown powder attached to their scales.

℞ Of this powder . . . . ℥v.
Rectified spirit . . . . Oij.

Prepare the tincture by percolation or digestion, as directed for the tincture of capsicum.

Med. Use.—Tonic and sedative in gout and rheumatism.

Dose.—f℥ss. to ℥ij.

Tinctura lupulina. *Tincture of lupuline.*

Dubl. Ph. 1850.

℞ Lupuline . . . . . ℥v.
Rectified spirit . . . . . Oij.

Macerate for 14 days; strain, express, and filter.

Tinctura macidis. *Tincture of mace.*

Ph. Hannov. Nova. 1831.

℞ Mace . . . . . ʒv.
Rectified spirit . . . . . ℔ij.
Macerate, press, and filter.

Tinctura matico. *Tincture of matico.*

Dubl. Ph. 1850.

℞ Matico leaves, in coarse powder ʒviij.
Proof spirit . . . . . Oij.
Macerate for 14 days; strain, express, and filter.

Tinctura melampodii. *Tincture of black hellebore.*

Lond. Ph. 1746.

℞ Black hellebore root . . ʒiv.
Cochineal . . . . . ℈ij.
Proof spirit . . . . fʒxxxij.
Macerate and strain.

Tinctura moschi. *Tincture of musk.*

Dubl. Ph. 1826.

℞ Musk, in powder . . . . ʒij.
Rectified spirit . . . . Oj.
Digest for 7 days, and filter.

Ph. Borussica, 1847.

℞ Musk . . . . . ʒj.
Rectified spirit (sp. gr. ·897 to ·900)
Distilled water . . . . āā ʒiij.
Macerate for 8 days in a close vessel, with frequent agitation and filter.

Note.—It should be of a dark reddish-brown colour.

Med. Use.—A stimulating antispasmodic.

Dose.—fʒij. or fʒiij., or more. It is principally used as a perfume.

Tinctura myrrhæ. *Tincture of myrrh.*

Lond. Ph. 1851.

℞ Myrrh, bruised . . . . ʒiij.
Rectified spirit . . . . . Oij.
Macerate for 7 days, and strain.

Edin. Ph. 1841.

℞ Myrrh, in moderately-fine powder . . . . . ʒiiiss.
Rectified spirit . . . . Oij
Pack the myrrh very gently without any spirit in a percolator; then pour on the spirit; and when 33 fluid-ounces have passed through, agitate well, to dissolve the oleo-resinous matter which first passes, and which lies at the bottom. This tincture is much less conveniently obtained by the process of digestion for 7 days.

Dubl. Ph. 1850.

℞ Myrrh, in coarse powder . . ʒiv
Rectified spirit . . . . . Oij.
Macerate for 14 days; strain, express and filter.

Med. Use.—Generally employed, diluted with water, as a lotion in sponginess or ulceration of the gums.

Tinctura nicotianæ. *Tincture of tobacco.*

Ph. Borussica, 1847.

℞ Tobacco leaves, fresh . . . ℔j.
Rectified spirit (sp. gr. ·835) . ℔j.
Bruise the tobacco in a stone mortar, and add the spirit; macerate for 4 days in a close vessel, with frequent agitation, then press it out and strain, and preserve it carefully.

Note.—It should be of a greenish-brown colour.

Tinctura nucis vomicæ. *Tincture of nux vomica.*

Dubl. Ph. 1826.

℞ Seeds of the Strychnos nux vomica, scraped . . . ʒij.
Rectified spirit . . . . ʒviij.

Macerate for 7 days, and filter.

Dose.—Min. x. to min. xxx.

Tinctura opii. *Tincture of opium.*

Lond. Ph. 1851.

℞ Powdered opium . . . . ℥iij.
Proof spirit . . . . . Oij.

Macerate for 7 days, then express and strain.

Edin. Ph. 1841.

℞ Opium, sliced . . . ℥iij.
Rectified spirit . . . Oj. & f℥vij.
Water . . . . . f℥xiiiss.

Digest the opium in the water at a temperature near 212° for 2 hours; break down the opium with the hand; strain, and express the infusion; macerate the residuum in the rectified spirit for about 20 hours, and then strain and express very strongly. Mix the watery and spirituous infusions, and filter.

This tincture is not easily obtained by the process of percolation; but when the opium is of fine quality, it may be prepared thus: slice the opium finely; mix the spirit and water; let the opium macerate in 14 fluidounces of the mixture for 12 hours, and then break it down thoroughly with the hand; pour the whole pulpy mass and fluid into a percolator, and let the fluid part pass through, add the rest of the spirit without packing the opium in the cylinder, and continue the process of percolation till 2 pints are obtained.

Dubl. Ph. 1850.

℞ Opium, in coarse powder . . ℥iij.
Proof spirit . . . . . Oij.

Macerate for 14 days; strain, express, and filter.

Ph. Borussica, 1847.

Tinctura opii simplex. Tinctura meconii. Tincture of opium.

℞ Opium, powdered . . . ℥iv.
Rectified spirit (sp. gr. ·897 to ·900)
Distilled water . . . aā ℥xix.

Macerate for 8 days in a close vessel, with frequent agitation, then press it out and strain, and preserve it carefully.

Note.—It should be of a dark reddish-brown colour, sp. gr. ·977 to ·980. One drachm contains the soluble matter of six grains of opium.

Dose.—Min. x. to f℥ss.

SYNONYME.

Laudanum.

Tinctura opii acetata. *Acetated tincture of opium.*

U. S. Ph. 1850.

℞ Opium . . . . . ℥ij.
Vinegar . . . . . f℥xij.
Alcohol . . . . . Oss.

Rub the opium with the vinegar; then add the alcohol, and having macerated for 14 days, express and filter through paper.

Dose.—Min. viij. to min. xxv.

Tinctura opii ammoniata. *Ammoniated tincture of opium.*

Edin. Ph. 1841.

℞ Benzoic acid,
Saffron, chopped . . . . āā ℥vj.
Opium, sliced . . . . ℥ss.
Oil of anise . . . . . ℥j.
Spirit of ammonia . . . Oij.

Digest for 7 days, and then filter.

Med. Use.—Anodyne and antispasmodic.

Dose.—♏x. to ℥j.

SYNONYME.

Scotch paregoric.

Tinctura opii crocata. *Laudanum liquidum Sydenhami. Tincture of opium with saffron.*

Ph. Borussica, 1847.

℞ Opium, powdered . . . ℥iv.
Saffron . . . . . ℥iss.
Cloves, coarsely powdered,
Cinnamon ,, ,, āā ʒij.
Madeira wine . . . . ℥xxxviij.

Pour the wine on the other ingredients; macerate for 8 days in a close vessel, with frequent agitation, then press it out, strain, and preserve it carefully.

Note.—It should be of a dark-brown saffron colour, sp. gr. 1·017 to 1·020. One drachm contains the soluble matter of 6 grains of opium.

Codex Medic. Hamberg. 1845.

℞ Opium . . . . . ℥ij.
Saffron . . . . . ʒvj.
Cloves . . . . . ʒj.
Cassia . . . . . ʒj.
Spanish wine . . . . . ℔j.

First exhaust the saffron with the wine, then add the other ingredients, and let them macerate for 6 days, after which strain ℥xij.

Note.—Sp. gr. 1·03. ʒj. is equal to gr. x. of opium.

Dose.—Gtt. x.

Tinctura opii nigra. *Black drop.*

Codex Medic. Hamberg. 1845.

℞ Opium . . . . . ℥ij.
Nutmegs . . . . . ʒiij.
Saffron . . . . . ʒj.
Distilled vinegar . . . . ℔j.

Boil them together for a quarter of an hour, then add ℥j. of sugar, and ℥ss. of yeast; put this mixture to ferment, and after 6 weeks, strain and evaporate to ℥iv.

Note.—Sp. gr. 1·2. ℥j. is equal to ℥ss. of opium.

Dose.—Gtt. j.

Tinctura pimpinellæ. *Tincture of saxifrage.*

Ph. Borussica, 1847.

℞ Pimpinella root, sliced, (common Burnet saxifrage) . . . . . ℥v.
Rectified spirit (sp. gr. ·897 to ·900) . . . . ℔ij.

Macerate for 8 days in a close vessel, with frequent agitation; then press it out and strain.

Note.—It should be of a brownish-yellow colour.

Tinctura pini compositæ. Substituted for *Tinctura lignorum.*

Ph. Hannov. Nova, 1831.

℞ Buds of abies excelsa . . ℥iij.
Rasped guaiacum . . . ℥ij.
,, sassafras wood . . ℥j.
Juniper berries . . . . ℥j.
Rectified spirit . . . . ℔iij.

Macerate, press, and strain.

Tinctura piperis angustifoliæ. *Tincture of matico.*

Dr. H. Lane.

℞ Matico leaves . . . . . ℥iiss.
Proof spirit . . . . . Oij.

Macerate for 14 days, and strain.

Tinctura picidiæ erythrinæ. *Tincture of Jamaica dogwood.*

Hamilton.

℞ Bark of Jamaica dogwood . ℥j.
Rectified spirit . . . . ℥xij.

Macerate for 14 days, and strain.

Tinctura pyrethri. *Tincture of pellitory of Spain.*

℞ Pellitory of Spain root . . ℥iv.
Rectified spirit . . . . Oj.

Macerate for 14 days, and strain.

Tinctura quassiæ. *Tincture of quassia.*

Edin. Ph. 1841.

℞ Quassia, in chips . . . ʒx.
Proof spirit. . . . . Oij.

Digest for 7 days, and then filter.

Med. Use.—This tincture possesses all the bitterness of the wood.

Dose.—f ʒss to ʒj.

Tinctura quassiæ composita. *Compound tincture of quassia.*

Edin. Ph. 1841.

℞ Cardamom seeds, bruised,
Cochineal, bruised . . āā ℥ss.
Cinnamon, in moderately-fine powder,
Quassia, in chips . . āā ʒvj.
Raisins . . . . . ℥vij.
Proof spirit. . . . . Oij.

Macerate for 7 days, strain the liquor, express strongly the residuum, and filter. This tincture may also be obtained by percolation as directed for compound tincture of cardamom, provided the quassia be rasped or in powder.

Med. Use.—An aromatic tonic.

Dose.—f ʒj to f ʒij.

Tinctura quinæ. *Tincture of quinine.*

Dr. Copland.

℞ Disulphate of quina . . gr. xlvj.
Compound tincture of orange-peel . . . f ℥vss.
Dilute sulphuric acid . f ʒij.

Mix, and filter.

Tinctura quinæ composita. *Compound tincture of quinine.*

Lond. Ph. 1851.

℞ Disulphate of quina . ʒv. and ℈j.
Tincture of orange . Oij.

Digest for 7 days, or until it may be dissolved, and strain.

Tinctura rhei. *Tincture of rhubarb.*

Edin. Ph. 1841.

℞ Rhubarb, in moderately-fine powder . . . . ℥iiiss.
Cardamom seeds, bruised . ℥ss.
Proof spirit. . . . . Oij.

Mix the rhubarb and cardamom seeds, and proceed by the process of percolation, as directed for tincture of cinchona. This tincture may also be prepared by digestion.

Lond. Ph. 1824.

℞ Rhubarb root, sliced . . ℥ij.
Cardamom seeds, bruised . ℥ss.
Saffron . . . . . ʒij.
Proof spirit. . . . . Oij.

Macerate for 14 days, and filter.

Note.—This formula has been omitted from the London Pharmacopœia, but the preparation is still kept by many pharmaceutists.

Med. Use.—Cordial, stomachic, and mildly purgative.

Dose.—As a stomachic, ʒj to ʒiij; as a purgative ℥ss to ℥j.

Tinctura rhei aquosa. *Aqueous tincture of rhubarb.*

Ph. Borussica, 1847.

℞ Rhubarb, cut in small pieces . . . . . ℥iss.
Pure carbonate of potash . ʒiij.
Spirituous cinnamon water. ℥ij.
Distilled water . . . . ℥xij.

Mix the cinnamon water with the distilled water, and pour it on the rhubarb and carbonate of potash, macerate until the next day, then press it out, set it aside for some time, and filter, and keep it in well-stopped bottles in a cold place.

Note.—It should be of a dark reddish-brown colour.

Tinctura rhei composita. *Compound tincture of rhubarb.*

Lond. Ph. 1851.

℞ Rhubarb, sliced . . . . ℥ijss.
Liquorice, bruised . . . ℥vj.
Ginger, sliced,
Saffron . . . . . āā ℥iij.
Proof spirit. . . . . Oij.

Macerate for 7 days; then express, and strain.

Dubl. Ph. 1850.

℞ Rhubarb root, bruised . . ℥iij.
Cardamom seeds, bruised . ℥j.
Liquorice root, bruised. . ℥ss.
Saffron, chopped fine . . ʒij.
Proof spirit. . . . . Oij.

Macerate for 14 days; strain, express, and filter.

Med. Use.—Cordial, stomachic, and cathartic.

Dose.—As a stomachic, f℥j to fʒiij; as a purgative, f℥ss to f℥j.

Tinctura rhei et aloes. *Tincture of rhubarb and aloes.*

Edin. Ph. 1841.

℞ Rhubarb, in moderately-fine powder . . . . . ℥iss.
Socotrine, or East Indian aloes, in moderately-fine powder . . . . . ʒvj.
Cardamom seeds, bruised . ʒv.
Proof spirit. . . . . Oij.

Mix the powders, and proceed as directed for tincture of cinchona.

Med. Use.—A cordial and stomachic purgative, in doses of from f℥ss to ℥j.

SYNONYME.

Tinctura rhabarbari composita.—Lond. Ph. 1788.

Tinctura rhei et gentianæ. *Tincture of rhubarb and gentian.*

Edin. Ph. 1841.

℞ Rhubarb, in moderately fine powder . . . . . ℥ij.
Gentian, finely cut, or in coarse powder . . . ℥ss.
Proof spirit. . . . . Oij.

Mix the powders, and proceed as directed for tincture of cinchona.

Med. Use.—Stomachic, tonic, and feebly purgative.

Dose.—As a tonic, f ʒj. to ʒiij.; as a very mild purgative, f ℥ss. to f ℥j.

Tinctura rhei vinosa darelii. *Tinctura rhei dalcis.*

Ph. Hannov. Nova, 1831.

℞ Rhubarb root . . . . ℥ij.
Small raisins . . . . ℥j.
Lemon-peel . . . . ℥ss.
Liquorice root . . . . ℥ss.
Cardamoms. . . . . ʒij.
Malaga wine . . . . ℔ij.

Macerate, press lightly, strain, and add
Extract of elecampane (extractum helenii*) . . ℥ss.
Sugar . . . . . ℥iij.
Mix.

Tinctura rhei vinosa. *Loco tinctura rhei darelii. Vinous tincture of rhubarb.*

Ph. Borussica, 1847.

℞ Rhubarb, cut small . . ℥ij.
Orange peel, sliced and freed from the white internal parenchyma . . ℥ss.
Lesser cardamoms, coarsely powdered. . . . . ʒij.
White sugar, powdered . ℥iij.
Madeira wine . . . . ℔ij.

Add the wine to the rhubarb, orange-peel, and cardamoms; macerate for 8 days in a close vessel, with frequent agitation, press it out, and add the sugar; and

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* Extractum helenii. *Extract of elecampane.*

Ph. Hannov. Nova, 1831.

℞ Elecampane root . . . ℔ij.
Rectified spirit . . . . ℔x.
Water . . . . . ℔x.

Macerate for 48 hours, press, recover the spirit by distillation, and inspissate the residue to the consistence of an extract.

when the dregs have subsided, decant the clear liquor.

Note.—It should be a yellowish-brown colour.

Tinctura rosæ. *Tincture of rose.*

Mr. Squire.

℞ Rose petals, bruised . . ℥v.
Proof spirit, made with rose-water . . . . Oj.

Digest for 3 days, frequently shaking, and press off. Digest the mass with Oss. of proof spirit for 3 days; press off, and mix the 2 liquids to form the tincture for use.

Tinctura rosarum acidula.

Codex Medic. Hamberg. 1845.

℞ Rose-leaves. . . . . ℥ss.
Diluted sulphuric acid . . ʒj.
Boiling water . . . . ℥iv.

Macerate for a night, and filter.

Tinctura sabinæ composita. *Compound tincture of savine.*

Lond. Ph. 1788.

℞ Extract of sabine . . . ʒj.
Tincture of castor . . . f ʒxvj.
„ myrrh . . . f ʒxvj.

Macerate until the extract is exhausted, then strain.

SYNONYMES.

Elixir myrrhæ compositum.—Lond. Ph. 1746.

Compound elixir of myrrh.

Tinctura sarzæ alcoholica. *Alcoholic tincture of sarsaparilla.*

Soubeiran's Trait. Ph. 1847.

℞ Sarsaparilla, divided . . 1 part.
Alcohol, sp. gr ·923 . . 4 parts.

Macerate for 15 days; strain with strong expression; filter.

Tinctura saturnina. *Saturnine tincture.*

Lond. Ph. 1746.

℞ Acetate of lead,
Sulphate of iron . . āā ʒij.
Rectified spirit. . . . f ʒxxxij.

Powder the salts separately; macerate them in the spirit, and strain the liquor through paper.

Tinctura scillæ. *Tincture of squill.*

Lond. Ph. 1851, and Edin. Ph. 1841.

℞ Squill, fresh dried . . . ℥v.
Proof spirit. . . . . Oij.

Macerate for 7 days; then express and strain. (Lond.)

Prepare this tincture by percolation, as directed for tincture of cinchona, but without packing the pulp firmly in the percolator. It may likewise be obtained by digestion, from the sliced bulb. (Edin.)

Dubl. Ph. 1850.

℞ Squills, dried, and in coarse powder . . . . . ℥v.
Proof spirit. . . . . Oij.

Macerate for 14 days; strain, express, and filter.

Med. Use.—Expectorant and diuretic. Used in chronic bronchial affections.

Dose.—Min. x. to ʒss.

Tinctura scillæ kalina.

Codex Medic. Hamberg. 1845.

℞ Squills, dried . . . . ℥ij.
Caustic potash . . . . ʒij.
Rectified spirit . . . . ℔j.

Macerate for 3 days, then strain ʒx.

Tinctura sennæ composita. *Compound tincture of senna.*

Lond. Ph. 1851.

℞ Senna . . . . . ℥iiiss.
Caraway, bruised . . . ℥iiiss.
Cardamoms, bruised . . ʒj.
Raisins, stoned . . . . ℥v.
Proof spirit. . . . . Oij.

Macerate for 7 days; then express and strain.

Edin. Ph. 1841.

℞ Sugar . . . . . ℥iiss.
Coriander, bruised . . . ℥j.
Jalap, in moderately-fine powder . . . . . ʒvj.
Senna . . . . . ℥iv.
Caraway, bruised,
Cardamom seeds, bruised, āā ʒv.
Raisins, bruised . . . ℥iv.
Proof spirit. . . . . Oij.

Digest for 7 days; strain the liquor, express strongly the residuum, and filter the liquids. This tincture may be more conveniently and expeditiously prepared by percolation, as directed for the compound tincture of cardamom.

If Alexandrian senna be used for this preparation, it must be freed of cynanchum leaves by picking.

Dubl. Ph. 1850.

℞ Senna . . . . . ℥iv.
Caraway seeds, bruised,
Cardamom seeds, bruised āā ℥ss.
Proof spirit. . . . . Oij.

Macerate for 14 days; strain, express, and filter.

Med. Use.—Carminative, cordial, stomachic, and purgative.

Dose.—f ℥ss to ℥j.

SYNONYMES.

Elixir salutis.—Lond. Ph. 1721.
Tinctura sennæ.—Lond. Ph. 1746.

Tinctura serpentariæ. *Tincture of serpentary, or snake-root.*

Lond. Ph. 1851.

℞ Serpentary, bruised. . . ℥iiiss.
Proof spirit. . . . . Oij.

Macerate for 7 days; then express and strain.

Edin. Ph. 1841.

℞ Serpentaria, in moderately-fine powder . . . . ℥iiiss.
Cochineal, bruised . . . ℥j.
Proof spirit. . . . . Oij.

Proceed by percolation or digestion, as for the tincture of cinchona.

Med. Use.—Used as an adjunct to tonic infusions.

Dose.—f ℥j to f ℥ij.

SYNONYME.

Tinctura serpentariæ virginianæ.—Lond. Ph. 1721.

Tinctura stomachica Lentini. *Lentin's stomachic tincture.*

Ph. Hannov. Nova, 1831.

℞ Calumba,
Galanga,
Gentian,
Zedoary. . . . . āā ℥iss.
Rhubarb . . . . . ʒvj.
Cochineal . . . . . ʒij.
Cardamoms. . . . . ʒiij.
Orange peel. . . . . ℥j.
Herb of carduus benedictus ℥iss.
Rectified spirit . . . . ℔v.

Macerate, press, and filter.

Tinctura stramonii. *Tincture of stramonium.*

Dubl. Ph. 1850.

℞ Stramonium seeds, bruised . ℥v.
Proof spirit. . . . . Oij.

Macerate for 14 days; strain, express, and filter.

U. S. Ph. 1850.

℞ Stramonium seeds, bruised. ℥iv.
Diluted alcohol . . . . Oij.

Macerate for 14 days; express and filter through paper.

This tincture may also be prepared by thoroughly moistening the stramonium seed, in powder, with diluted alcohol, allowing it to stand for 48 hours, then transferring it to a percolator, and gradually pouring upon it diluted alcohol, until 2 pints of filtered liquor are obtained.

Ph. Borussica, 1847.

℞ Stramonium seeds, coarsely powdered . . . . ℥v.
Rectified spirit (sp. gr. ·897 to ·900) . . . . . ℔ij.

Pour the spirit on the seeds; macerate for 8 days in a close vessel, with frequent agitation, then press it out, strain, and preserve it carefully.

Note.—It should be of a brownish-yellow colour.

Tinctura styptica. *Styptic tincture.*

Lond. Ph. 1746.

℞ Calcined sulphate of iron . ʒj.
Brandy, which has been kept in a cask . . . . . ℥xxxij.

Macerate until it becomes dark coloured, then strain.

Tinctura cum succino. *Teinture de succin. Tincture of amber.*

Codex, Ph. Franç. 1839.

℞ Amber, in fine powder . . ℥j.
Rectified spirit (sp. gr. ·843) ℥xvj.

Digest them in a close vessel for 6 days, and strain.

Tinctura sumbuli. *Tincture of sumbul.*

℞ Sumbul root . . . . ℥ij.
Proof spirit. . . . . ℥xvj.

Macerate for 7 days; then express and filter.

Dose.—20 to 30 minims.

Tinctura tolutana. *Tincture of tolu.*

Lond. Ph. 1851.

℞ Tolu balsam . . . . ℥ij.
Rectified spirit . . . . Oij.

Macerate until the balsam may be dissolved, and strain.

Edin. Ph. 1841.

℞ Tolu balsam, in coarse powder . . . . . ℥iiiss.
Rectified spirit . . . . Oij.

Digest the balsam in the spirit with gentle heat until it is dissolved.

Dubl. Ph. 1850.

℞ Balsam of Tolu. . . . ℥ij.
Rectified spirit . . . . Oj.

Dissolve the balsam in the spirit with the aid of a gentle heat; let it stand until the sediment subsides, then decant the clear tincture.

Med. Use.—A stimulating expectorant.

Dose.—ʒss to ʒj.

Tinctura valerianæ. *Tincture of valerian.*

Lond. Ph. 1851, and Edin. Ph. 1841.

℞ Valerian, bruised . . . ℥v.
Proof spirit. . . . . Oij.

Macerate for 7 days; then express and strain. (Lond.)

Proceed by percolation and digestion, as for tincture of cinchona. (Edin.)

Dubl. Ph. 1850.

℞ Valerian root, bruised . . ℥v.
Proof spirit. . . . . Oij.

Macerate for 14 days; strain, express, and filter.

Med. Use.—Stimulant and antispasmodic.

Dose.—ʒj. to ʒij.

Tinctura valerianæ composita. *Compound tincture of valerian.*

Lond. Ph. 1851.

℞ Valerian, bruised . . . . ℥v.
Aromatic spirit of ammonia . Oij.

Macerate for 7 days; then express and strain.

Tinctura valerianæ ammoniata. *Ammoniated tincture of valerian.*

Edin. Ph. 1841.

℞ Valerian, bruised . . . . ℥v.
Spirit of ammonia. . . . Oij.

Macerate for 14 days, and strain.

Med. Use.—Stimulant and antispasmodic.

Dose.—f ʒj. to ʒij.

SYNONYMES.

Tinctura valerianæ volatilis.—Lond. Ph. 1746.

Tinctura valerianæ ammoniata.—Lond. Ph. 1788.

Tinctura valerianæ ætherea. *Ethereal tincture of valerian.*

Ph. Borussica, 1847.

℞ Lesser valerian root, coarsely powdered . . . . . ʒj.
Spirit of ether . . . . ʒviij.

Macerate for 8 days in a close vessel, with occasional agitation, then press it out and strain.

Note.—It should be of a yellowish-brown colour.

Tinctura vanillæ. *Tincture of vanilla.*

Ph. Borussica, 1847.

℞ Vanilla, sliced . . . . ʒj.
Rectified spirit (sp. gr. ·897 to ·900) . . . . . ʒvj.

Macerate for 8 days in a close vessel, with frequent agitation, then press it out and strain.

Note.—It should be of a yellowish-brown colour.

Tinctura zingiberis. *Tincture of ginger.*

Lond. Ph. 1851, and Edin. Ph. 1841.

℞ Ginger, sliced . . . . ʒiiss.
Rectified spirit . . . . Oij.

Macerate for 7 days; then express and strain. (Lond.)

Proceed by percolation or digestion, as directed for tincture of cinchona. (Edin.)

Dubl. Ph. 1850.

℞ Ginger root, in coarse powder ʒviij.
Rectified spirit. . . . . Oij.

Macerate for 14 days; strain, express, and filter.

Med. Use.—A valuable carminative.

Dose.—f ʒj. to f ʒij.

Toffy. *Everton toffy.*

Put half a pound of fresh butter into a saucepan or skillet, melt it over a gentle fire, and then add 1 pound of coarse brown sugar; stir them well together and keep them over the fire for 15 or 18 minutes, or until some of the mixture, dropped into cold water, forms a mass that breaks between the teeth. When it has acquired this state, pour it out into a tin mould previously rubbed with butter.

Tracing paper.

Paper brushed over with a thin varnish made of colourless Damara resin, the varnish being allowed to soak through the paper without any apparent coating of it remaining on the surface.

Tripoli. *Alana.*

The septariæ, ludi Helmonti, or waxen veins, found on the east coast of England, calcined; also, the clunch, or curl stone, of the Staffordshire mines, calcined. *Venice tripoli* is said to come from the island of Corfu; this variety is whitish-yellow, or pale straw-coloured, which becomes pale rose-coloured when calcined. *Tripoli* is said to contain 80 *per cent.* of silica, derived, as Ehrenberg has shown, from the casts of animalcules. It is used for cleaning and polishing metals, &c.

Trochisci acaciæ. *Acacia lozenges.*

Edin. Ph. 1841.

℞ Gum-arabic . . . . . ʒiv.
Starch . . . . . ʒj.
Pure sugar . . . . . ℔j.

Mix and pulverize them, and make them into a proper mass with rose-water for forming lozenges.

Med. Use.—An agreeable pectoral.

Employed to allay the tickling in the throat, which provokes coughing.

SYNONYME.

Trochisci gummosi.—Edin. Ph. 1839.

Trochisci acidi tartarici. *Tartaric acid lozenges.*

Edin. Ph. 1841.

℞ Tartaric acid . . . . . ʒij.
Pure sugar . . . . . ℥viij.
Volatile oil of lemons . . ♏x.

Pulverize the sugar and acid, add the oil, mix them thoroughly, and with mucilage beat them into a proper mass for making lozenges.

Med. Use.—Employed for coughs and sore throats.

SYNONYME.

Acidulated lemon lozenges.

Trochisci acidi citrici. *Citric acid lozenges.*

Codex, Ph. Franç. 1839.

℞ Citric acid . . . . . ʒiij.
Sugar . . . . . ℥xvj.
Essence of lemon . . . gtt. xij.
Mucilage of tragacanth . . q. s.

Mix according to art, and divide into lozenges of 12 grains each.

Med. Use.—Employed for coughs and sore-throats.

Trochisci anthelmintici. *Worm lozenges.*

Codex Medic. Hamberg. 1845.

℞ Ethereal extract of wormseed ʒj.
Jalap powder . . . . . ʒij.
Sugar . . . . . ℥ij.
Starch . . . . . ʒij.
Mucilage of tragacanth . . q. s.

Make into 60 lozenges.

The same formula is given in the Ph. Austr. 1836.

Trochisci Bechici albi.

Ph. Hannov. Nova, 1831.

℞ Orris root . . . . . ℥iss.
Starch . . . . . ℥iiss.
White sugar . . . . . ℥xx.
Mucilage of tragacanth, made with rose-water, q. s. to form into lozenges.

Trochisci Bechici nigri.

Ph. Hannov. Nova, 1831.

℞ Powdered orris root,
„ Liquorice-root,
„ Aniseed,
„ Fennel-seed . . āā ℥j.
Liquorice juice (Italian) . ℥iv.
dissolved in hyssop water.
White sugar . . . . . ℥xx.
Mucilage of tragacanth, made with rose-water q. s. to form into lozenges.

Trochisci camphoræ. *Camphor lozenges.*

℞ Camphor (dissolved in spirit) . ʒij.
Sugar . . . . . ℥viij.

Mix, and add mucilage of tragacanth sufficient to form into a paste, to be divided into lozenges of 10 grains each.

Trochisci cretæ. *Chalk lozenges.*

Edin. Ph. 1841, and U. S. Ph. 1850.

℞ Prepared chalk . . . . . ℥iv.
Gum-arabic . . . . . ʒj.
Nutmeg . . . . . ʒj.
Pure sugar . . . . . ℥vj.

Reduce them to powder, and beat them with a little water into a proper mass for making lozenges.

Med. Use.—Antacid and aromatic, used in acidity of the stomach.

SYNONYME.

Trochisci carbonatis calcis.—Edin. Ph. 1839.

TROCHISCI CUBEBINI. *Lozenges of cubebs.*

Codex Medic. Hamberg. 1845.

℞ Balsam of copaiba . . . ℥vj.
Extract of cubebs . . . . ℥vj.
Yolk of 3 eggs.
Powdered marshmallow root . ℥vj.

Make into long pieces of 12 grains each, and cover them with sugar.

TROCHISCI GLYCYRRHIZÆ. *Liquorice lozenges.*

Edin. Ph. 1841.

℞ Extract of liquorice,
Gum-arabic . . . . āā ℥vj.
Pure sugar . . . . . ℔j.

Dissolve them in a sufficiency of boiling water, and then concentrate the solution over the vapour-bath to a proper consistence for making lozenges.

Med. Use.—For allaying tickling cough caused by irritation of the fauces.

TROCHISCI GLYCYRRHIZÆ ET OPII. *Liquorice and opium lozenges.*

U. S. Ph. 1850.

℞ Opium, in powder . . . ℥ss.
Liquorice, in powder,
Sugar, in powder,
Gum-arabic, in powder . āā ℥x.
Oil of anise . . . . . f℥ij.

Mix the powders intimately; then add the oil of anise, and with water form them into a mass, to be divided into troches, each weighing 6 grs.

TROCHISCI IPECACUANHÆ. *Ipecacuanha lozenges.*

U. S. Ph. 1850.

℞ Ipecacuanha, in powder . . ℥ss.
Sugar, in powder . . . . ℥xiv.
Arrowroot, in powder . . ℥iv.
Mucilage of tragacanth . . q. s.

Mix the powders intimately, and with the mucilage form them into a mass, to be divided into troches, each weighing 10 grains.

Each lozenge made as above contains about a quarter of a grain of ipecacuanha. They are frequently made 4 times this strength.

Ph. Borussica, 1847.

℞ Ipecacuanha root, coarsely powdered. . . . . ℥ij.
Tragacanth, powdered . . ℥ij.
White sugar, powdered . . ℥xvj.
Warm water . . . . . ℥x.

Pour the water on the ipecacuanha, and macerate for some hours in a warm place; then add to the pressed and strained liquor the tragacanth, and with the sugar make a mass, to be divided into lozenges weighing 4 grains each.

Codex Medic. Hamberg, 1845.

℞ Sugar . . . . . ℥iiiss.
Sugar of milk . . . . ℥iiiss.
Gum arabic. . . . . ℥ss.
Ipecacuanha . . . . ℥ss.
Mucilage of tragacanth. . q. s.

Make into 960 lozenges.

Note.—Each lozenge is equal to ¼ grain of ipecacuanha.

Med. Use.—A very useful remedy for coughs, and for promoting expectoration.

TROCHISCI LACTUCARII. *Lactucarium lozenges.*

Edin. Ph. 1841.

To be prepared with lactucarium, in the same proportion and in the same manner as the opium lozenge.

Useful in tickling coughs.

TROCHISCI LAVANDULÆ. *Lavender lozenges.*

℞ Pure sugar . . . . . ℔iij
English oil of lavender . . ℥j.
Liquid lake, q. s. to colour.
Mucilage of tragacanth, q. s. to form a mass, to be divided into lozenges (Bartlett.)

TROCHISCI LIMONUM. *Lemon lozenges.*

℞ Pure sugar . . . . . ℔iv.
Citric acid . . . . . ʒiij.
Essence of lemons . . . . ʒss.
Infusion of saffron, q. s. to colour.
Mucilage of tragacanth, q. s. to form a mass, to be divided into lozenges. (Bartlett.)

TROCHISCI MAGNESIÆ. *Magnesia lozenges.*

Edin. Ph. 1841.

℞ Carbonate of magnesia . . ʒvj.
Pure sugar . . . . . ʒiij.
Nutmeg . . . . . ℈j.

Pulverize them, and with mucilage of tragacanth beat them into a proper mass for making lozenges.

U. S. Ph. 1850. *Trochisci magnesiæ.*

℞ Magnesia . . . . . ʒiv.
Sugar . . . . . ℔j.
Nutmeg . . . . . ʒj.
Mucilage of tragacanth . . q. s.

Rub the magnesia, sugar, and nutmeg together until they are thoroughly mixed, then with the mucilage form them into a mass, to be divided into troches, each weighing 10 grains.

Med. Use.—In acidity of the stomach, *ad libitum.*

TROCHISCI MENTHÆ PIPERITÆ. *Peppermint lozenges.*

U. S. Ph. 1850.

℞ Oil of peppermint . . . fʒj.
Sugar, in powder . . . . ℔j.
Mucilage of tragacanth . . q. s.

Rub the oil of peppermint with the sugar until they are thoroughly mixed; then with the mucilage form them into a mass, to be divided into troches each weighing 10 grains.

Ph. Borussica, 1847.

Rotulæ menthæ piperitæ.

℞ Sugar lozenges . . . ʒiv.
Oil of peppermint . . gtt. xij.
Acetic ether . . . . gtt. xxx.

Put the lozenges in a bottle containing the oil previously dissolved in the ether, constantly shaking until the lozenges are perfectly moistened. Keep them in a well-stopped vessel.

Ph. Austr. 1836.

Rotulæ menthæ piperitæ. Peppermint drops.

Warm ʒj. of powdered sugar, and add gtt. xxiv. of oil of peppermint, and as much peppermint-water as will melt the sugar, then pour it out in small drops.

TROCHISCI MORPHIÆ. *Morphia lozenges.*

Edin. Ph. 1841.

℞ Muriate of morphia . . . ℈j.
Tincture of tolu . . . . ʒss.
Pure sugar . . . . . ʒxxv.

Dissolve the muriate of morphia in a little hot water; mix it and the tincture of tolu with the sugar; and, with a sufficiency of mucilage, form a proper mass for making lozenges, each of which should weigh about 15 grains.

Med. Use.—Principally used to allay tickling cough in chronic pectoral affections.

Dose.—No. x. to xij. daily. Each lozenge contains a little more than a fortieth of a grain of muriate of morphia.

TROCHISCI MORPHIÆ ET IPECACUANHÆ. *Lozenges of morphia and ipecacuanha.*

Edin. Ph. 1841.

℞ Muriate of morphia . . . ℈j.
Ipecacuanha, in fine powder . ʒj.
Tincture of tolu . . . . fʒss.
Pure sugar . . . . . ʒxxv.

Dissolve the muriate in a little hot water; mix it with the tincture and the ipecacuanha and sugar, and, with a suffi-

ciency of mucilage, beat the whole into a proper mass, which is to be divided into 15-grain lozenges.

Dose and Use.—The same as the preceding.

Trochisci nitri. *Nitre lozenges.*

℞ Pure sugar . . . . . ℔iij.
Pure nitre . . . . . ℔j.
Mucilage of tragacanth q. s. to form a mass, to be divided into lozenges. (Bartlett.)

Trochisci opii. *Opium lozenges.*

Edin. Ph. 1841.

℞ Opium . . . . . ʒij.
Tincture of tolu . . . ℥ss.
Pure sugar, in fine powder. ʒvj.
Powder of gum arabic,
Extract of liquorice . āā ʒv.

Reduce the opium to a fluid extract; mix it intimately with the liquorice, previously reduced to the consistence of treacle; add the tincture; sprinkle the gum and sugar into the mixture, and beat it into a proper mass, which is to be divided into lozenges of 10 grains.

Med. Use.—Principally employed to allay troublesome cough. 7 lozenges contain about 1 grain of opium.

SYNONYME.

Trochishi Glycyrrhiza cum opio.—Edin. Ph. 1839.

Trochisci paregorici. *Paregoric lozenges.*

℞ Pure sugar . . . . . ℔viij.
Paregoric . . . . . ʒj.
Tartaric acid . . . . ℥ss.
Liquid lake, q. s. to colour.
Mucilage of tragacanth, q. s. to make a mass to be divided into lozenges. (Bartlett.)

Trochisci rhei. *Tabellæ de rheo. Rhubarb lozenges. Rhubarb tablets.*

Codex, Ph. Franç. 1818.

℞ Powdered rhubarb . . . ℥ss.
Powdered sugar. . . . ʒv.
Mucilage of tragacanth, made with cinnamon water q. s.

Make it into a paste, and divide into tablets, each weighing 12 grains.

Trochisci rhei aromatici. *Aromatic rhubarb lozenges. Live long.*

No. 1.

℞ Powdered rhubarb,
Powdered ginger . . āā ʒj.
Sugar . . . . . ℔ss.
Oil of caraways. . . . gtt. xx.
Water . . . . . q. s.

Dissolve the sugar in a small quantity of water over a gentle fire, then add the powders, mixed, and, after removing them from the fire, mix in the oil, pour the mixture on an oiled slab, and spread it out with a hot iron.

No. 2.

℞ Powdered rhubarb,
Powdered ginger,
Powdered cardamoms . āā ʒj.
Sugar . . . . . ℔ss.
Water . . . . . q. s.

Mix as No. 1.

Trochisci rosæ acidæ. *Acid rose lozenges.*

℞ Pure sugar . . . . . ℔viij.
Tartaric acid . . . . ʒiss.
Otto of roses . . . . gtt. xij.
Mucilage of tragacanth, q. s. to form a mass, to be divided into lozenges. (Bartlett.)

Trochisci rosæ rubri. *Red rose lozenges.*

℞ Pure sugar. . . . . ℔viij.
Tartaric acid . . . . ʒvj.
Otto of roses . . . . gtt. v.
Liquid lake, q. s. to colour.

Mucilage of tragacanth, q. s. to form a mass, to be divided into lozenges. (Bartlett.)

Trochisci sodæ bicarbonatis. *Lozenges of bicarbonate of soda.*

Edin. Ph. 1841.

℞ Bicarbonate of soda. . .	ʒj.
Pure sugar	ʒiij.
Gum-arabic.	ʒss.

Pulverize them, and with mucilage beat them into a proper mass for making lozenges.

Use.—In acidity of the stomach, *ad libitum.*

Trochisci spongiæ ustæ. *Burnt-sponge lozenges.*

℞ Pure sugar	℔j.
Burnt sponge, powdered .	ʒiv.
Mucilage of tragacanth. .	q. s.

Mix and make into lozenges. (Bartlett.)

Trochisci zingiberis. *Ginger lozenges.*

℞ Pure sugar	℔vij.
Powdered ginger . . .	ʒxij.
Powdered gum arabic . .	ʒvij.
Infusion of saffron, q. s. to colour.	

Water, sufficient to make a mass, to be divided into lozenges. (Bartlett.)

Tutia. *Tutty. Impure oxide of zinc.*

This is found deposited in the chimneys of the furnaces in which lead ores containing zinc, or ores mixed with *lapis calaminaris*, are smelted. It forms incrustations on the flues, but when prepared for use in medicine, is in the form of a brown powder, sometimes having a shade of blue.

Unguentum acidi nitrici. *Nitric acid ointment.*

Dubl. Ph. 1826.

℞ Olive oil	℔j.
Prepared lard	ʒv.
Nitric acid	fʒvss.

Melt the lard with the oil in a glass vessel, and when they begin to concrete add the acid, then stir them constantly with a glass rod until they become firm.

Med. Use.—Employed as a local stimulant in chronic cutaneous diseases.

SYNONYMES.

Unguentum acidi nitrosi.—Dubl. Ph. 1807.

Oxygenized fat. Pommade d'Alyon.

Unguentum acidi sulphurici. *Sulphuric acid ointment.*

Dubl. Ph. 1826.

℞ Sulphuric acid	ʒj.
Prepared hog's lard . .	℥j.

Mix.

Med. Use.—Said to be useful in scabies.

Unguentum æruginis. *Ointment of verdigris.*

Edin. Ph. 1841.

℞ Resinous ointment . . .	℥xv.
Verdigris, in fine powder .	℥j.

Melt the ointment, sprinkle into it the powder of verdigris, and stir the mixture briskly as it cools and concretes.

Dubl. Ph. 1850.

Unguentum cupri Subacetatis.

℞ Prepared subacetate of copper	ʒss.
Ointment of white wax. .	ʒviiss.

Triturate the subacetate of copper with the ointment, until they are intimately mixed.

Med. Use.—A mild caustic, applied to venereal ulcers of the mouth and tonsils, and to the ulcerated sore throat of scarlatina.

Unguentum album camphoratum. *Camphorated white ointment.*

Lond. Ph. 1746.

℞ Olive oil	℥xvj.
White wax	ʒiv.
Spermaceti	ʒiij.
Camphor	ʒiss.

Melt the wax and spermaceti with the oil, and when they have cooled, rub the ointment with the camphor, dissolved in a little oil.

Edin. Ph. 1740.

℞ Spermaceti ointment . .	℥x.
Cerusse (white lead) . .	℥ij.
Camphor (rubbed with a little oil)	ʒiss.

Mix.

Lond. Ph. 1721.

℞ Oil of roses	℥ix.
White wax	℥ij.
Cerusse (white lead) . .	℥iij.
Camphor, in powder . .	ʒij.

Mix.

Note.—Lard is frequently substituted for the oil of roses and wax.

SYNONYME.

Unguentum, sometimes pronounced *Anguentum*. The London formula of 1721 is that generally used.

Unguentum aloes cum petroleo. *Ointment of aloes with petroleum.*

Ph. Batava, 1805.

℞ Cape aloes, powdered . .	℥ij.
Inspissated ox-gall, Petroleum	āā ℥iij.
Hog's lard, purified . .	℔ij.

With this axunge, melted by a gentle heat, mix the powder and the gall, constantly stirring; and then to the mass, removed from the fire and wellnigh cold, add the petroleum.

Unguentum althææ. *Marshmallow ointment.*

Lond. Ph. 1746.

℞ Oil of mucilages . . .	℔ij.
Bees'-wax	℔ss.
Resin	℥iij.
Venice turpentine . . .	℥ss.

Mix with heat.

Note.—Olive oil is frequently substituted for oil of mucilages in making this ointment.

Unguentum antimonii potassio-tartratis. *Ointment of potassio-tartrate of antimony.* (Lond.) *Unguentum antimoniale.* (Edin.)

Lond. Ph. 1851.

℞ Potassio-tartrate of antimony, rubbed into the finest powder . . .	℥j.
Lard	℥iv.

Rub together.

Edin. Ph. 1841.

℞ Potassio-tartrate of antimony	℥j.
Lard	℥iv.

Mix.

Dubl. Ph. 1850.

Unguentum antimonii tartarizati.

℞ Tartar emetic, in very fine powder	ʒj.
Ointment of white wax .	ʒvij.

Triturate the powder with the ointment in a mortar, until they are intimately mixed.

Med. Usc.—Used as a rubefacient, and as a counter-irritant in cases of deep-seated inflammation.

Unguentum antipsoricum. *Itch ointment.*

℞ Sulphur.	℥viij.
Carbonate of potash . .	℥j.
Hellebore root, powdered .	℥iij.
Vermilion	℥ss.
Lard	℔ij.
Oil of lemons	℥ss.

Mix.

Unguentum aquæ rosæ. *Ointment of rose-water.*

U. St. Ph. 1850.

℞ Rose-water, Oil of almonds . . .	āā f ℥ij.
Spermaceti	℥ss.
White wax	ʒj.

Melt together, by means of a water-bath, the oil, spermaceti, and wax; then add the rose-water, and stir the mixture constantly until it is cold.

UNGUENTUM AROMATICUM. *Balsamum stomachale Wackeri. Aromatic ointment.*

Codex Medic. Hamberg. 1845.

℞ Lard . . . . . ℥iij.
Olive oil . . . . . ʒvj.
Yellow wax. . . . . ʒvj.
Muscat balsam . . . . ʒij.
Oil of wormwood . . . ʒij.
Oil of rosemary. . . . ʒij.
Oil of curled mint . . . ʒj.
Oil of cloves . . . . ʒj.
Bole. . . . . ʒij.
Oleo-balsamic mixture . . ʒij.
Mix.

Ph. Austr. 1836.

℞ Simple ointment . . . ℔iiss.
Yellow wax. . . . . ℥iij.
Oil of laurel . . . . ℥iij.
Melt, and when cold, add
Oil of juniper,
Oil of mint,
Oil of rosemary,
Oil of lavender . . . āā ʒij.
Mix.

In the Ph. *Castrensis*, instead of the last 4 oils, there is ℥ss. of oil of juniper ordered.

UNGUENTUM ARSENICI ALBI. *Ointment of white arsenic.*

Ph. Castr. Ruthena, 1840.

℞ White arsenic . . . . ʒj.
Lard . . . . . ʒxij.
Mix.

UNGUENTUM BASILICUM. *Basilicon ointment.*

Ph. Borussica, 1847.

℞ Olive oil . . . . . ℔iij.
Yellow wax,
Colophony,
Suet. . . . . āā ℔j.
Common turpentine . . ℔ss.

Melt the ingredients with a gentle heat, and strain.

Note.—It should be of a yellowish-brown colour.

UNGUENTUM BASILICUM FLAVUM. *Yellow basilicon.*

Lond. Ph. 1746.

℞ Olive oil . . . . . f ℥xvj.
Yellow wax,
Yellow resin,
Burgundy pitch . . āā ℔j.
Common turpentine . . ℥iij.

Melt the wax, resin, and pitch, in the oil with a gentle heat, then remove them from the fire, add the turpentine, and strain the mixture while still hot.

Note.—For the modern representative of the above, see *Ceratum resinæ*, page 672.

UNGUENTUM BASILICUM NIGRUM. *Black basilicon. Tetrapharmacum.*

Lond. Ph. 1746.

℞ Olive oil . . . . . f ℥xvj.
Yellow wax,
Yellow resin,
Black pitch . . . . āā ℥ix.

Melt them together, and strain while hot.

Note.—For the modern representative of the above, see *Unguentum picis nigræ.*

UNGUENTUM BASILICUM VIRIDE. *Green basilicon ointment.*

Lond. Ph. 1746.

℞ Yellow basilicon . . . ℥viij.
Olive oil . . . . . f ℥iij.
Prepared verdigris. . . ℥j.
Mix, and make them into an ointment.

UNGUENTUM BELLADONNÆ. *Ointment of belladonna.*

Lond. Ph. 1851.

℞ Extract of belladonna . . ʒj.
Lard . . . . . ℥j.
Rub together.

Unguentum cantharidis. *Ointment of cantharides.*

Lond. Ph. 1851.

℞ Cantharis, rubbed into the finest powder . . . . ℥iij.
Distilled water . . . . . f ℥xij.
Cerate of resin . . . . . ℔j.

Boil down the water with the cantharis to a half, and strain. Mix in the cerate to the strained liquor, then let it evaporate to a proper consistence.

Edin. Ph. 1841.

℞ Resinous ointment . . . ℥vij.
Cantharides, in very fine powder . . . . . ℥j.

Melt the ointment; sprinkle into it the cantharides powder; and stir the mixture briefly, as it concretes on cooling.

Dubl. Ph. 1850.

℞ Liniment of Spanish flies . f ℥viij.
White wax . . . . . ℥iij.
Spermaceti . . . . . ℥j.

Melt the wax and spermaceti in the oil, with a gentle heat, and stir the mixture constantly until it concretes.

Use.—As a stimulant and epispastic to keep up a discharge from a blistered surface.

SYNONYME.

Unguentum lyttæ.—Lond Ph. 1809.

Unguentum infusi cantharidis. *Ointment of infusion of cantharides.*

Edin. Ph. 1841.

Cantharides, in moderately-fine powder,
Resin,
Bees'-wax . . . . . āā ℥j.
Venice turpentine,
Axunge . . . . . āā ℥ij.
Boiling water . . . . f ℥v.

Infuse the cantharides in the water for one night, squeeze strongly, and filter the expressed liquid. Add the axunge, and boil till the water is dispersed, Then add the wax and resin; and when these have become liquid, remove the vessel from the fire, add the turpentine, and mix the whole thoroughly.

Use.—Employed for the same purposes as the cerate.

Unguentum ceræ albæ. *Ointment of wax.*

Dubl. Ph. 1850.

℞ White wax . . . . . ℔j.
Prepared lard . . . . . ℔iv.

Melt them together with a gentle heat, and stir constantly until the mixture concretes.

Use.—Used as a mild and cooling dressing.

Unguentum cerussæ. *Unguentum album simplex. Ointment of white lead.*

Ph. Borussica, 1847.

℞ Lard . . . . . ℔ij.
White lead, in fine powder . ℔j.

Mix them thoroughly.

Note.—It should be very white.

Unguentum cetacei. *Ointment of spermaceti.*

Lond. Ph. 1851.

℞ Spermaceti . . . . . ℥v.
White wax . . . . . ℥xiv.
Olive oil . . . . . Oj.
Or as much as may be sufficient.

Constantly stir together the ingredients, melted with a slow fire, until they shall have cooled.

Dubl. Ph. 1850.

℞ Spermaceti . . . . . ℔j.
White wax . . . . . ℔ss.
Prepared lard . . . . . ℔iij.

Melt them together with a gentle heat, and stir constantly until cold.

Use.—This is the common dressing for blisters.

Unguentum cocculi. *Ointment of cocculus.*

Edin. Ph. 1841.

Take any convenient quantity of cocculus indicus, separate and preserve the kernels, beat them well in a mortar, first alone, and then in a little axunge, and then add axunge till it amounts altogether to five times the weight of the kernels.

Unguentum conii. *Ointment of hemlock.*

Lond. Ph. 1851.

℞ Fresh hemlock,
Lard . . . . . āā ℔j.

Boil the hemlock with the lard, until it may become brittle; then express through linen.

Med. Use.—For neuralgic and rheumatic pains; in cancer of the stomach, liver, or the uterus over the site of these organs; and in glandular enlargements of the abdomen. It is also used as a sedative and anodyne application to foul, cancerous, and irritable sores.

Unguentum creasoti. *Ointment of creasote.*

Lond. Ph. 1851.

℞ Creasote . . . . . fʒss.
Lard . . . . . ʒj.

Rub and mix them.

Edin. Ph. 1841.

℞ Axunge . . . . . ʒiij.
Creasote . . . . . ʒj.

Melt the axunge, add the creasote, stir them briskly, and continue to do so as the mixture concretes on cooling.

Dubl. Ph. 1850.

℞ Creasote . . . . . fʒj.
Ointment of white wax . . ʒvij.

To the ointment, liquified by a moderate heat, add the creasote, and stir constantly until the mixture concretes.

Med. Use.—This has been applied in the treatment of ulcers and burns; and chiefly as a dressing after the employment of the more concentrated forms of this remedy.

Unguentum diapompholygos. *Ointment of pompholyx.*

Lond. Ph.

℞ Olive oil . . . . . ʒxx.
Juice of the berries of the deadly nightshade . . . ʒviij.

Boil them over a gentle fire until the moisture is evaporated, adding towards the conclusion of the boiling,

White wax . . . . . ʒv.

Then take the mixture from the fire, and add to it while still hot the following ingredients in fine powder—

Ceruss . . . . . ʒiv.
Burnt lead (litharge),
Pompholyx (oxide of zinc) āā ʒij.
Frankincense . . . . ʒj.

Mix, to form an ointment.

Unguentum digitalis. *Ointment of foxglove.*

Ph. Badensia, 1841.

℞ Tincture of foxglove (prepared as tincture of aconite) ʒvj.
Lard . . . . . ℔j.

Macerate in a water-bath until all the spirit is evaporated.

Unguentum elemi. *Ointment of elemi.*

Lond. Ph. 1851.

℞ Elemi . . . . . ʒiij.
Turpentine . . . . . ʒiiss.
Suet . . . . . ʒv.
Oil of olive . . . . . fʒss.

Melt together the elemi with the suet; then remove from the fire, and immediately mix the turpentine and oil with these; afterwards express through linen.

Dubl. Ph. 1850.

℞ Resin of elemi . . . . ℥iv.
Ointment of white wax . . ℔j.

Melt them together, strain through flannel, and stir the mixture constantly until it concretes.

Med. Use.—Employed as a stimulating dressing to old and indolent ulcers.

SYNONYMES.

Unguentum e gummi elemi, sive Linimentum arcæi.—Lond. Ph. 1721.

Unguentum e gummi elemi.—Lond. Ph. 1746.

Unguentum elemi compositum.—Lond. Ph. 1824.

Ph. Borussica, 1847.

Unguentum elemi. Balsamum arcæi.

℞ Elemi,
Venice turpentine,
Suet,
Lard . . . . . āā ℥iv.

Melt them in a vapour-bath, and strain.

Note.—It should be of a yellowish colour.

Unguentum gallæ compositum. *Compound ointment of gall-nut.*

Lond. Ph. 1851.

℞ Gall-nut, rubbed into the finest powder . . . . . ℥vj.
Lard . . . . . ℥vj.
Powdered opium . . . ℥iss.

Rub together.

Dubl. Ph. 1850.

Unguentum gallæ.

℞ Galls, in very fine powder ℥j.
Ointment of white wax . ℥vij.

Rub the powdered galls with the ointment, until a uniform mixture is obtained.

Use.—An astringent application in hæmorrhoids.

Unguentum gallæ et opii. *Ointment of gall and opium.*

Edin. Ph. 1841.

℞ Galls, in fine powder . . . ℥ij.
Opium, in powder . . . ℥j.
Axunge . . . . . ℥j.

Triturate them together into a uniform mass.

Unguentum hydrargyri. *Ointment of mercury.*

Lond. Ph. 1851.

℞ Mercury . . . . . ℔j.
Lard . . . . . ℥xiss.
Suet . . . . . ℥ss

First rub the mercury with the suet and a little of the lard until globules can no longer be seen; then add that which is left of the lard, and mix.

Edin. Ph. 1841.

℞ Mercury . . . . . ℔ij.
Axunge . . . . . ℥xxiij.
Suet . . . . . ℥j.

Triturate the mercury with the suet and a little of the axunge till globules are no longer visible; then add the rest of the axunge, and mix the whole thoroughly. This ointment is not well prepared so long as metallic globules may be seen in it with a magnifier of four powers. The mercurial ointment with the proportions here directed may be diluted at pleasure with twice or thrice its weight of axunge.

Dubl. Ph. 1850.

℞ Pure mercury
Prepared lard . . . . āā ℔j.

Rub them together, until metallic globules cease to be visible to the naked eye.

SYNONYMES.

Unguentum cæruleum.—Lond. Ph. 1721.

Unguentum cæruleum fortius.—Lond. Ph. 1746.

Neapolitan ointment. Blue ointment.

Unguentum hydrargyri mitius. *Milder mercurial ointment.*

Lond. Ph. 1836.

℞ Stronger ointment of mercury ℔j.
Lard . . . . . ℔ij.

SYNONYMES.

Unguentum cæruleum mitius.—Lond. Ph. 1746.

Trooper's ointment. Unction.

Omitted from the Lond. Ph. 1851.

Unguentum hydrargyri ammonio-chloridi. *Ointment of ammonio-chloride of mercury.*

Lond. Ph. 1851.

℞ Ammonio-chloride of mercury ʒij.
Lard . . . . . ℥iij.

Add the ammonio-chloride of mercury to the lard, and rub them together.

Edin. Ph. 1841.

Unguentum precipitati albi.

℞ White precipitate . . . ʒij.
Axunge . . . . . ℥iij.

Melt the axunge, add the white precipitate, and stir the mixture briskly while it concretes on cooling.

Use.—For the treatment of scrofulous and cancerous tumours.

SYNONYME.

White precipitate ointment.

Unguentum hydrargyri iodidi. *Ointment of iodide of mercury.*

Edin. Ph. 1851.

℞ Iodide of mercury . . . ℥j.
White wax . . . . . ℥ij.
Lard . . . . . ℥vj.

Add the iodide to the lard and wax, melted together, and rub together.

Use.—The same as the preceding.

Unguentum hydrargyri biniodidi. *Ointment of biniodide of mercury.*

Lond. Ph. 1836.

℞ Biniodide of mercury . . ℥j.
White wax . . . . . ℥ij.
Lard . . . . . ℥vj.

Add the biniodide of mercury to the wax and lard, melted together, and mix.

Use.—The same as the preceding.

Omitted from the Lond. Ph. 1851.

Dubl. Ph. 1850.

Unguentum hydrargyri iodidi rubri.

℞ Red iodide of mercury . . ʒj.
Ointment of white wax . . ʒvij.

Incorporate the iodide of mercury and ointment by careful trituration in a mortar.

Unguentum hydrargyri nitratis. *Ointment of nitrate of mercury.*

Lond. Ph. 1851.

℞ Mercury . . . . . ℥ij.
Nitric acid . . . . . fʒiv.
Lard . . . . . ℔j.
Oil of olive . . . . fʒviij.

First dissolve the mercury in the acid; then mix the solution whilst yet hot, with the lard and oil melted together.

Dubl. Ph. 1850.

Unguentum hydrargyri nitratis; vel,

Unguentum citrinum.

℞ Pure mercury . . . . ℥j.
Pure nitric acid . . . fʒj.
Distilled water . . . . ℥ss.
Prepared lard . . . . ℥iv.
Olive oil . . . . . fʒviij.

Mix the acid with the water, and dissolve the mercury in the mixture, with the aid of a gentle heat. Melt the lard with the oil, and, while the mixture is hot, add to it the solution of mercury, also hot; let the temperature of the mixture next be raised so as to cause effervescence, and then withdrawing the heat, stir the mixture

with a porcelain spoon, until it concretes on cooling.

Edin. Ph. 1841. *Unguentum citrinum. Citrine ointment.*

℞ Pure nitric acid . f℥viij. and f℥vj.
Mercury . . ℥iv.
Axunge . . . ℥xv.
Olive oil . . f℥xxxij.

Dissolve the mercury in the acid with the aid of a gentle heat. Melt the axunge in the oil, with the aid of a moderate heat, in a vessel capable of holding six times the quantity; and while the mixture is hot, add the solution of mercury, also hot, and mix them thoroughly. If the mixture do not froth up, increase the heat a little, till this take place. Keep this ointment in earthenware vessels, or in glass vessels secluded from the light.

Use.—A stimulant, and used in various cutaneous affections, as porrigo larvalis, herpes, &c.

Unguentum hydrargyri nitratis mitius. *Milder ointment of nitrate of mercury.*

Lond. Ph. 1851.

℞ Ointment of nitrate of mercury . . . . . ℥j.
Lard . . . . . ℥vij.

Rub together.

This ointment is to be used freshly prepared.

Unguentum hydrargyri nitrico-oxydi. *Ointment of nitric-oxide of mercury.*

Lond Ph. 1851.

℞ Nitric-oxide of mercury . ℥j.
White wax . . . . . ℥ij.
Lard . . . . . ℥vj.

Add the nitric-oxide, rubbed into a very fine powder, to the wax and lard melted together, and rub them together.

Dubl. Ph. 1850.

Unguentum hydrargyri oxydi rubri.

℞ Red oxide of mercury . . ℥j.
Ointment of white wax . ℥vij.

Reduce the oxide to a very fine powder, and mix it intimately with the ointment by trituration.

Edin. Ph. 1841. *Unguentum oxydi hydrargyri.*

℞ Red oxide of mercury . ℥j.
Axunge . . . . . ℥viij.

Triturate them into a uniform mass.

Use.—This is stimulant and escharotic, and is applied to indolent ulcers; applied, also, when diluted, to the edges of the eyelids, in psorophthalmia.

SYNONYMES.

Unguentum subnitratis hydrargyri.—Dubl. Ph. 1807.

Red precipitate ointment.

Unguentum inulæ. *Ointment of elecampane.*

Ph. Castr. Ruthena, 1840.

℞ Elecampane root. . . . ℔ss.
Boiling water . . . . . ℔j.
Lard . . . . . ℔ss.

Boil the elecampane root in the water to a thick consistence, then add the lard, and again boil, until all moisture is removed.

Unguentum iodinii compositum. *Compound ointment of iodine.*

Lond. Ph. 1851.

℞ Iodine. . . . . ℥ss.
Iodide of potassium . . . ℥j.
Rectified spirit . . . . f℥j.
Lard . . . . . ℥ij.

Add the iodide rubbed into as fine a powder as possible, and the iodine dissolved in the spirit, to the lard, and rub together.

Edin. Ph. 1841.

Unguentum iodinii. Ointment of iodine.

℞ Iodine . . . . . ℥j.
Iodide of potassium . . . ℥ij.
Axunge . . . . . ℥iv.

Triturate the iodine and iodide together,

and then add gradually the axunge, continuing the trituration till a uniform ointment be obtained.

Dubl. Ph. 1850.

℞ Pure iodine . . . . . ʒss.
Iodide of potassium . . . ʒj.
Ointment of white wax . . ʒxivss.

Rub the iodine and iodide of potassium well together, in a glass or porcelain mortar; add the ointment gradually, and continue the trituration until a uniform ointment is obtained.

Use.—A useful application in goitre, or enlarged scrofulous glands. To be rubbed, night and morning, over the affected part, in the quantity of a drachm each time.

Unguentum laurinum. *Laurine ointment.*

Pharm. Bat. 1805.

℞ Mutton suet, purified. . . ʒviij.
Laurel oil . . . . . ʒx.
Oil of turpentine . . . . ʒj.
Oil of amber, purified . . ʒss.

With the suet melted by a gentle heat, mix the laurel oil; then add the rest, and stir the mass, until it has cooled.

Unguentum linariæ. *Ointment of toad-flax.*

Ph. Hannov. Nova, 1831.

℞ Fresh herb of yellow toad-flax (Linaria vulgaris) . ℔j.
Lard . . . . . ℔ij.

Boil them together, at a gentle heat, until no more moisture remains, then press and strain.

Unguentum mezerei. *Ointment of mezereon.*

U. S. Ph. 1850.

℞ Mezereon, sliced transversely . . . . . ʒiv.
Lard . . . . . ʒxix.
White wax . . . . . ʒij.

Moisten the mezereon with a little spirit, and beat it in an iron mortar until reduced to a fibrous mass; then digest it with the lard, in a salt-water bath, for 12 hours, strain with strong expression, and allow the strained liquor to cool slowly, so that any undissolved matters may subside. From these separate the medicated lard, and melt it with the wax at a moderate heat, and stir them constantly till they are cold.

Ph. Borussica, 1847.

℞ Ethereal extract of mezerion . . . . . ʒj.
Ointment of wax . . . ʒj.

Mix.

Codex Medic. Hamberg. 1845.

℞ Spirituous extract of mezerion . . . . . ʒij.
Lard . . . . . ʒviij.
White wax . . . . . ʒj.

Dissolve the extract of mezerion in a little spirit of wine, then add the lard and white wax, and melt together.

Ph. Castr. Ruthena, 1840. *Unguentum mezerei cyprinum.*

℞ Mezerion bark . . . . ʒj.
Cantharides . . . . ʒij.
Olive oil . . . . . ʒiij.
Yellow wax. . . . . ʒij.
Turpentine . . . . . ʒss.
Powdered verdigris. . . ʒij.

Macerate the mezerion bark and cantharides in the olive oil for 24 hours, then strain, and melt with them the other ingredients.

Unguentum opii. *Ointment of opium.*

Lond. Ph. 1851.

℞ Powdered opium . . . . ℈j.
Lard . . . . . ʒj.

Rub together.

Unguentum picis. *Ointment of pitch.*

Lond. Ph. 1851.

℞ Pitch,
Wax,
Resin, of each . . . . ℥xj.
Oil of olive . . . . Oj.

Melt together, and express through linen.

Unguentum picis liquidæ. *Tar ointment.*

Lond. Ph. 1851.

℞ Liquid pitch (tar),
Suet . . . . . āā ℔j.

Melt them together, and press through a linen cloth.

Dubl. Ph. 1850.

℞ Tar . . . . . Oss.
Yellow wax . . . . . ℥iv.

Melt the wax with a gentle heat, then add the tar, and stir the mixture constantly until it concretes.

Edin. Ph. 1841.

℞ Tar . . . . . ℥v.
Bees'-wax. . . . . ℥ij.

Melt the wax with a gentle heat, add the tar, and stir the mixture briskly while it concretes on cooling.

Use.—Stimulant and detergent, in tinea capitis and other foul eruptions.

Unguentum piperis nigri. *Ointment of black pepper.*

Dubl. Ph. 1826.

℞ Prepared hog's-lard . . ℔j.
Black pepper, reduced to powder . . . . . ℥iv.

Make an ointment.

Unguentum plumbi acetatis. *Ointment of acetate of lead.*

Edin. Ph. 1836.

℞ Simple ointment . . . . ℥xx.
Acetate of lead, in fine powder ℥j.

Mix them thoroughly.

Dubl. Ph. 1850.

℞ Acetate of lead, in very fine powder . . . . . ℥j.
Ointment of white wax . ℔j.

Melt the ointment with a gentle heat, then add the acetate of lead gradually, and stir the mixture constantly until it concretes.

Use.—A soothing and astringent application to irritable ulcers, or excoriated parts.

SYNONYME.

Unguentum saturninum.

Unguentum plumbi carbonatis. *Ointment of carbonate of lead.*

Edin. Ph. 1841.

℞ Simple ointment . . . . ℥v.
Carbonate of lead . . . . ℥j.

Mix them thoroughly.

Dubl. Ph. 1850.

℞ Carbonate of lead, in very fine powder . . . . . ℥iij.
Ointment of white wax . . ℔j.

Melt the ointment with a gentle heat, then add the carbonate of lead gradually, and stir the mixture constantly until it concretes.

Use.—Employed to promote the cicatrization of excoriated parts and slight ulcerations.

SYNONYME.

Unguentum cerussæ.—Dubl. Ph. 1807.

Unguentum plumbi compositum. *Compound ointment of lead.*

Lond. Ph. 1851.

℞ Plaster of lead . . . . ℔iij.
Oil of olive . . . . . f℥xviij.
Prepared chalk . . . . ℥vj.
Diluted acetic acid . . . f℥vj.

Dissolve the plaster in the oil with a slow fire. Then add, in the first place, the chalk, and afterwards the acid, constantly stirring, until they shall have cooled.

Use.—This has been applied with success in obstinate ulcers.

SYNONYME.

Kirkland's neutral cerate.

Unguentum plumbi iodidi. *Ointment of iodide of lead.*

Lond. Ph. 1851.

℞ Iodide of lead . . . . ʒj.
Lard . . . . . ʒviij.
Rub together.

Dubl. Ph. 1850.

℞ Iodide of lead, in fine powder ʒj.
Ointment of white wax . . ʒvij.
Mix the iodide of lead intimately with the ointment by trituration.

Use.—An application for enlarged joints.

Unguentum potassii iodidi. *Ointment of iodide of potassium.*

Lond. Ph. 1851.

℞ Iodide of potassium . . ʒij.
Boiling distilled water . . fʒij.
Lard . . . . . ʒij.
Dissolve the iodide in the water; then mix these with the lard.

Dubl. Ph. 1850.

℞ Iodide of potassium . . . ʒj.
Distilled water . . . . ʒss.
Ointment of white wax . . ʒvij.
Triturate the iodide of potassium with the water, then add the ointment, and rub them well together.

Use.—The same as the other ointments of iodine.

Unguentum populeum. *Ointment of poplar.*

Codex Medic. Hamberg. 1845.

℞ Poplar buds, fresh (buds of Populus nigra) . . ℔j.
Lard . . . . . ℔ij.
Henbane, dry . . . . ʒj.
Rectified spirit . . . . ℥j.
Macerate the poplar buds in the lard for 3 days, with a gentle heat; then add the other ingredients, and leave them standing for a night: then boil them until all moisture is removed, and finally strain and press, and keep constantly stirring until cold.

Deschamps.

℞ Buds of the black poplar, 2 parts.
Water . . . . . 1 part.
Lard . . . . . 12 parts.
Boil together until the moisture is evaporated, then strain.

Note.—The resin of the poplar buds is said to preserve the lard from becoming rancid.

Unguentum populeum compositum. *Compound ointment of poplar.*

Codex, Ph. Franç., 1839.

℞ Buds of the black poplar . 3 parts.
Fresh leaves of white poppy,
„ belladonna,
„ henbane,
„ solanum nigrum . āā 2 „
Lard . . . . . 16 „
Bruise the leaves in a marble mortar, put them into a pan with the lard, and heat them over a gentle fire until the moisture is all evaporated; then add the poplar buds, bruised, and digest for 24 hours; strain, press, and after the dregs have subsided, pour off the clear ointment.

Unguentum resinæ. *Ointment of resin.*

Edin. Ph. 1841. *Unguentum resinosum.*

℞ Resin . . . . . ʒv.
Axunge . . . . . ʒviij.
Bees'-wax . . . . . ʒij.
Melt them together with a gentle heat, and then stir the mixture briskly while it cools and concretes.

Dubl. Ph. 1850.

℞ Resin, in coarse powder . . ℔ss.
Yellow wax . . . . . ʒiv.
Prepared lard . . . . . ℔j.
Melt them together with a gentle heat, strain the mixture, while hot, through flannel, and stir constantly until it concretes.

Use.—A stimulating application to foul and indolent ulcers.

Unguentum rosmarini compositum. *Unguentum nervinum. Compound ointment of rosemary.*

Ph. Borussica, 1847.

℞ Lard	. . . . .	℔iv.
Suet	. . . . .	℔ij.
Yellow wax,		
Oil of bay	. . . . .	āā ℔ss.
Oil of rosemary,		
Oil of juniper	. . . .	āā ʒiij.

Add the oil of rosemary and oil of juniper to the other ingredients, melted by the heat of a vapour-bath and half cooled.

Note.—It should be of a greenish colour.

Codex Medic. Hamberg. 1845.

℞ Rosemary	. . . . .	ʒiv.
Marjoram	. . . . .	ʒiss.
Rue	. . . . .	ʒiss.
Pellitory of Spain	. . . .	ʒiij.
Rectified spirit	. . . .	ʒviij.
Lard	. . . . .	℔iv.
Suet	. . . . .	℔ij.
Oil of laurel	. . . . .	ʒss.
Oil of juniper	. . . . .	ʒiij.
Oil of rosemary	. . . .	ʒiij.
Yellow wax	. . . . .	℔ss.

Pound the herbs well together with the rectified spirit, then add the lard and suet; melt, and macerate them for a night over the water-bath, so that all moisture may be removed; and, lastly, press, strain, and add the yellow wax and essential oils.

Ph. Hannov. Nova, 1831.

℞ Fresh herb of rosemary	. .	℔j.
,, marjoram,		
,, rue	. . .	āā ℔ss.
Bay berries	. . . . .	ʒiv.
Lard	. . . . .	℔iv.
Suet	. . . . .	℔ij.
Yellow wax	. . . . .	℔ss.
Oil of rosemary,		
,, juniper	. . . .	āā ʒiij.

Boil the fresh herbs and bay berries with the lard and suet until moisture is removed, then press and strain, and add the wax and essential oils.

Unguentum rosatum. *Rose ointment.*

Ph. Borussica, 1847.

℞ Lard	. . . . .	ʒviij.
White wax	. . . . .	ʒij.
Rose-water	. . . . .	ʒij.

Add the rose-water gradually to the lard and wax, melted by the heat of a vapour-bath, and half cooled.

Note.—When well stirred it is a very white ointment.

Ph. Danica, 1840.

℞ Lard, washed with rose-water	. . . . .	ʒviij.
Yellow wax	. . . .	ʒij.
Rose-water	. . . . .	ʒij.
Otto of roses	. . . .	gtt. xx.

Melt the lard and wax together, then gradually add the rose-water, keeping the mixture constantly stirred, and lastly add the otto of roses.

Unguentum sabinæ. *Savine ointment.*

Lond. Ph. 1851.

℞ Fresh savine, bruised	. .	℔ss.
White wax	. . . .	ʒiij.
Lard	. . . . .	℔j.

Add the savine to the lard and wax, melted together; then strain through linen.

Dubl. Ph. 1850.

℞ Savine tops, dried and in fine powder	. . . .	ʒj.
Ointment of white wax	.	ʒvij.

Mix the powder intimately with the ointment, by trituration.

Use.—Employed for keeping up the discharge rrom a blistered surface.

Unguentum sambuci. *Elder ointment.*

Lond. Ph. 1851.

℞ Elder (flowers),		
Lard	. . . . .	āā ℔j.

Boil the elder flowers in the lard until they become crisp; then press through a linen cloth.

Unguentum sambuci. *Elder ointment. Green elder ointment.*

Dubl. Ph. 1826.

℞ Fresh leaves of elder . . ℔iij.
Prepared hog's lard . . ℔iv.
Prepared mutton suet . . ℔ij.

Make an ointment in the same manner as the savine ointment.

Use.—An emollient cooling ointment.

Unguentum saponata camphoratum. *Ointment of soap camphorated.*

Codex Medic. Hamberg. 1845.

℞ Windsor soap, powdered . ℥xvj.
Water . . . . . ℥viij.
Olive oil . . . . . ℥vj.
Camphor . . . . . ℥j.

Boil the soap and water together, continually stirring until it becomes of a thick consistence, then add ℥v. of the olive oil, and when partly cooled, the camphor, previously dissolved in ℥j. of the olive oil.

Unguentum simplex. *Simple ointment.*

Edin. Ph. 1841.

℞ Olive oil . . . . . f℥vss.
White wax . . . . . ℥ij.

Melt the wax in the oil, and stir the mixture briskly while it concretes on cooling.

Use.—A mild dressing.

Unguentum scrophulariæ. *Ointment of scrophularia.*

Dubl. Ph. 1826.

℞ Fresh leaves of the knotty-rooted figwort, . .
Prepared hog's lard . āā ℔ij.
Prepared mutton suet . . ℔j.

Boil the leaves in the fat until they become crisp, then strain by expression.

Use.—This ointment has been found to act almost as a specific in a malignant disease to which children are liable, called "burnt holes." It has also been found useful in tinea capitis, impetigo, and other skin diseases.

Unguentum stramonii. *Ointment of stramonium.*

U. S. Ph. 1850.

℞ Extract of stramonium leaves . . . . . ℥j.
Lard . . . . . ℥j.

Rub the extract with a little water, until uniformly soft, and then with the lard.

Unguentum sulphuris. *Sulphur ointment.*

Lond. Ph. 1851.

℞ Sulphur . . . . . ℔ss.
Lard . . . . . ℔j.

Rub together.

Edin. Ph. 1841.

℞ Axunge . . . . . ℥iv.
Sublimed sulphur . . . ℥j.

Mix them thoroughly together.

Dubl. Ph. 1850.

℞ Sublimed sulphur . . . ℔j.
Prepared lard . . . . ℔iv.

Mix them well by trituration.

SYNONYME.

Unguentum e sulphure.—Lond. Ph. 1746.

Unguentum sulphuris compositum. *Compound sulphur ointment.*

Lond. Ph. 1851.

℞ Sulphur . . . . . ℥iv.
White hellebore powdered . ʒx.
Nitrate of potash, powdered ℈ij.
Soft soap . . . . . ℥iv.
Lard . . . . . ℔j.

Mix together.

Use.—These ointments are used in the cure of scabies.

Unguentum sulphuris iodidi. *Ointment of iodide of sulphur.*

Lond. Ph. 1851.

℞ Iodide of sulphur, powdered ʒss.
Lard . . . . . ℥j.
Rub together.

Unguentum tabaci. *Ointment of tobacco.*

U. S. Ph. 1850.

℞ Fresh tobacco, cut in pieces ℥j.
Lard . . . . . ℔j.
Boil the tobacco in the lard over a gentle fire till it becomes friable, then strain through linen.

Unguentum tripharmacum. *Ointment of three things.*

Lond. Ph. 1746.

℞ Lead plaster . . . . ℥iv.
Olive oil . . . . . f℥ij.
Vinegar . . . . . f℥j.
Boil them over a gentle fire, continually stirring them, until they have acquired the consistence of a hard ointment.

Unguentum tutiæ. *Ointment of tutty.*

Lond. Ph. 1788.

℞ Prepared tutty,
Spermaceti ointment,
Of each a suitable quantity to form a soft ointment.

Unguentum zinci. *Ointment of zinc.*

Lond. Ph. 1851.

℞ Oxide of zinc . . . . ℥j.
Lard . . . . . ℥vj.
Mix.

Edin. Ph. 1841.

℞ Simple liniment . . . ℥vj.
Oxide of zinc . . . . ℥j.
Mix them thoroughly together.

Dubl. Ph. 1850.

Unguentum zinci oxydi.

℞ Oxide of zinc . . . . ℥ij.
Ointment of white wax . . ℥xij.
Melt the ointment with a gentle heat, and having added the oxide of zinc, mix them intimately, and stir constantly until the mixture concretes.

Ph. Borussica, 1847.

Unguentum zinci. Unguentum de nihilo. Ointment of zinc.

℞ Oxide of zinc . . . . ʒj.
Rose ointment . . . . ʒix.
Mix perfectly.

Note.—It should be a very white ointment.

Med. Use.—Astringent and stimulant, in ophthalmia, and excoriated nipples.

Usquebagh, sive *Aqua vitæ.* Hibernis popularis.

Lond. Ph. 1677.

℞ Good brandy . . . . ℔xxiv.
Liquorice root . . . . ℔j.
Raisins, stoned . . . . ℔ss.
Cloves . . . . . ℥ss.
Mace,
Ginger . . . . . āā ʒij.
Macerate for 14 days, and strain.

Varnish.

A solution of resins in spirits or oils; used for covering the surfaces of wood or metals, painted or otherwise, from the influence of the air, &c. There are two kinds of varnishes, distinguished as *Spirit Varnishes* and *Fat Varnishes.*

Spirit varnishes.

These are solutions of resins in rectified spirit of wine, or spirit of turpentine. Heat is generally applied to facilitate the solution; and as some resins, especially copal, are, even with heat, difficult of solution in spirit of wine, camphor, or some volatile oils, are sometimes added to increase the solvent power of the spirit.

Amber varnish.

No. 1.

℞ Amber, in powder,
Sandarach, in powder,
Mastic, in powder . āā 12 parts.
Rectified spirit . . . 100 ,,
Digest with the heat of a sand-bath until the resins are dissolved, then strain.

No. 2.

(For metals.)

℞ Amber,
Copal . . . . . āā 60 parts.
Black rosin . . . . 30 ,,

Melt, and add sufficient spirit of turpentine to make it of the proper consistence.

No. 3.

(For gilded woods, &c.)

℞ Amber . . . . . 60 parts.
Black rosin . . . . 15 ,,

Melt with a little oil of turpentine, then add,

Elemi . . . . . 30 parts.
Spirit of turpentine . . 375 ,,

Mix, and strain.

No. 4.

(For water colours.)

℞ Amber . . . . . 30 parts.
Camphor . . . . 0·1 part.
Rectified spirit . . . 150 parts.

Digest until dissolved, then strain.

Black varnish.

No. 1.

(For papier maché objects.)

℞ Amber,
Black rosin,
Sandarach . . . āā 30 parts.
Spirit of turpentine . . 375 ,,

Dissolve with heat, and add of the best lamp-black sufficient to colour it.

No. 2.

(For iron plate.)

℞ Amber . . . . . 90 parts.
Black resin . . . . 60 ,,

Melt and add,

Spirit of turpentine . . 45 ,,
Painters' varnish . . 45 ,,

Mix.

Chinese varnish.

℞ Mastic,
Sandarach . . . āā 6 parts.
Rectified spirit . . . 50 ,,

Digest until dissolved, then strain.

Copal varnish.

No. 1.

℞ Copal, in coarse powder . 10 parts.
Clean sand . . . . 10 ,,
Camphor . . . . . 1 part.
Rectified . . . . . 100 parts.

Mix the copal and sand, and enclose them in a linen bag. Dissolve the camphor in the spirit, and put them into a cohobation apparatus, suspending the bag of resin near the top of the liquid. Boil the spirit until the resin is dissolved.

No. 2.

℞ Copal . . . . . 90 parts.
Sandarach . . . . 180 ,,
Mastic . . . . . 90 ,,
Venice turpentine . . 75 ,,
Clean sand . . . . 100 ,,
Rectified spirit . . . 1000 ,,

Dissolve as No. 1.

Note.—Anime is generally substituted for copal in making these varnishes.

Lac varnish.

℞ Shellac . . . . . 90 parts.
Venice turpentine . . 4 ,,
Rectified spirit . . . 500 ,,

Digest until dissolved, then strain.

Lacquer.

No. 1.

℞ Shellac . . . . . 120 parts.
Sandarach . . . . 45 ,,
Mastic . . . . . 30 ,,
Amber . . . . . 30 ,,
Black rosin . . . . 90 ,,
Dragon's blood . . . 30 ,,
Turmeric,
Gamboge . . . āā 24 ,,
Rectified spirit . . . 1000 ,,

Digest until dissolved, then strain.

No. 2.

℞ Seed lac . . . . . 120 parts
Sandarach . . . . 120 ,,
Dragon's blood . . . 16 ,,
Gamboge . . . . 2 ,,
Turmeric . . . . 2 ,,
Venice turpentine . . 50 ,,
Clean sand . . . . 150 ,,
Rectified spirit . . . 1000 ,,

Digest in a sand-bath and strain.

No. 3.

℞ Seed lac,
Gamboge,
Dragon's blood . āā 120 parts.
Saffron . . . . . 39 „
Rectified spirit . . . 1000 „
Digest with heat, and strain.

No. 4.

℞ Seed lac,
Sandarach . . . āā 120 parts.
Dragon's blood . . . 15 „
Turmeric . . . . 2 „
Gamboge . . . . 2 „
Venice turpentine . . 60 „
Spirit of turpentine . . 1000 „
Digest with heat, and strain.

Note.—Aloes is sometimes added to these, to give a darker colour.

Picture varnish.

No. 1.

Mastic varnish.

℞ Mastic . . . . . 360 parts.
Venice turpentine . . 45 „
Camphor . . . . 15 „
Spirit of turpentine . . 1000 „
Dissolve with heat

No. 2.

℞ Copal, or anime . . . 60 parts.
Camphor . . . . . 4 „
Oil of spike lavender . . 180 „
Dissolve with heat; then add,
Spirit of turpentine, sufficient to give it the proper consistence.

Fat varnishes.

These are solutions of resins in fatty oils, generally linseed oil, to which, however, a little spirit of turpentine is added. The following instructions for manufacturing these varnishes have been furnished by Mr. Davison, who was for many years extensively engaged in the manufacture of them.

Pure linseed oil, not less than a year old, should be used. In making *body* and *carriage varnish*, the oil must be previously submitted to a process called *clarifying*. This consists of heating it in a clean copper boiler to a temperature of about 280° Fah., adding 2½ pounds of calcined white vitriol to every 50 gallons of oil, keeping it at the above temperature for about an hour; then removing the fire, letting the oil stand for 24 hours, and decanting off the clear portion. After this operation the oil should stand for a few weeks, to deposit any sediment, before being made into varnish.

In making fat varnishes, a vessel called a *running-pot* is used. It consists of a copper vessel 30 inches deep, 12 inches in diameter at the top, and 9 inches at the bottom. A flange is riveted to the outside, about 6 inches from the bottom, so that when placed over a ring furnace, the bottom only of the vessel is exposed to the heat. The resins are melted in this pot, with as little heat as possible, so as to avoid discolouring them; if the resins employed should be difficult to melt, a little oil may be put into the pot with them. When the resin has been thus melted, the oil, previously heated nearly to its boiling-point, is poured in and mixed with the melted resin; the turpentine and dryers are then added, and the varnish is subsequently strained. It should be kept for 6 months before being used.

Body varnish.

Mr. Davison.

℞ Anime (pale) . . . ℔vij.
Clarified linseed oil . . ℔xx.
Spirit of turpentine . . cong. iiiss.
Sugar of lead . . . ℔ss.
Mix according to the above instructions.

Carriage varnish.

Mr. Davison.

℞ Anime . . . . . ℔vij.
Clarified linseed oil . . ℔xxiv.
Spirit of turpentine . . cong. v.
Sugar of lead,
White vitriol . . . āā ℥iv.
Mix according to the foregoing instructions.

Dutch varnish, for paper, parchment, &c.

℞ Sandarach,
Mastic,
Venice turpentine . āā 120 parts.
Amber . . . . . 30 „
Linseed oil,
Oil of turpentine . . āā 250 „
Mix with heat

Painters' varnish.

℞ Sandarach . . . . 120 parts.
Mastic . . . . . 30 „
Venice turpentine . . . 6 „
Boiled linseed oil . . 750 „
Essence of turpentine . 90 „
Dissolve the resins by the aid of heat, then strain, and expose the varnish to the sun for 2 days.

Engravers' varnish.

For winter.

No. 1.

℞ Yellow wax . . . . 46 parts.
Mastic . . . . . 30 „
Asphaltum . . . . 15 „
Melt them together, and pour into water.

For summer.

No. 2.

℞ Yellow wax . . . . 120 parts.
Asphaltum . . . . 60 „
Mastic,
Amber. . . . . āā 30 „
Melt them together, and pour into water.

For engraving on glass.

No. 1.

℞ Wax . . . . . 30 parts.
Mastic . . . . . 15 „
Asphaltum . . . . 7 „
Common turpentine . . 2 „
Mix.

No. 2.

℞ Mastic . . . . . 15 parts.
Common turpentine . . 7 „
Oil of spike lavender . . 4 „
Mix.

Soft wax for engravers.

No. 1.

℞ Suet . . . . . 1 part.
Wax . . . . . 2 parts.
Mix.

No. 2.

℞ Wax . . . . . 5 parts.
Olive oil . . . . . 1 part.
Mix.

No. 3.

℞ Wax . . . . . 4 parts.
Common turpentine . . 1 part.
Mix.

Ventriculus vitulinus præparatus. *Calf's stomach prepared.*

Plenck's Ph. 1804.

Let the calf's stomach, after being well washed with water, be macerated for 2 hours in vinegar, then, when well dried, let it be preserved.

Veratria. *Veratria.*

Lond. Ph. 1836.

℞ Cevadilla, bruised . . ℔ij.
Rectified spirit . . . cong. ij
Diluted sulphuric acid,
Solution of ammonia,
Purified animal charcoal,
Magnesia . . . āā q. s.
Boil the cevadilla with a gallon of the spirit for an hour in a retort to which a receiver has been fitted. Pour off the liquor, and what remains again boil with another gallon of the spirit and the spirit recently distilled, and pour off the liquor. And let that be done a third time. Press the cevadilla, and let the spirit distil from the mixed and strained liquors. What remains evaporate to the proper consistence of an extract. Boil this thrice, or oftener, in water, to which a little diluted sulphuric acid has been added, and evaporate the strained liquors to the consistence of a syrup by a gentle heat. Mix the magnesia with this, when it shall have cooled, occasionally shaking

them; then press, and wash. Let the same thing be done twice or thrice; then dry what remains, and digest in spirit with a gentle heat, twice or thrice, and strain as often. Lastly, let the spirit distil. Boil the remainder for a quarter of an hour in water, to which a little sulphuric acid, and also animal charcoal, have been added, and strain. Lastly, all the charcoal being washed away, evaporate the liquors cautiously, until they acquire the consistence of a syrup, and into them drop as much ammonia as may be sufficient to throw down the veratria. Separate this, and dry it.

Note.—Very slightly soluble in water, more in alcohol, but most of all in sulphuric ether. It has no smell, but has a bitter taste. It is to be used with much caution.

Edin. Ph. 1841. *Veratria.*

Take any convenient quantity of cevadilla; pour boiling water over it in a covered vessel, and let it macerate for 24 hours; remove the cevadilla, squeeze it, and dry it thoroughly with a gentle heat. Beat it now in a mortar, and separate the seeds from the capsules by brisk agitation in a deep narrow vessel. Grind the seeds in a coffee-mill, and form them into a thick paste, with rectified spirit. Pack this firmly in a percolator, and pass rectified spirit through it till the spirit ceases to be coloured. Concentrate the spirituous solutions by distillation, so long as no deposit forms; and pour the residuum while hot into twelve times its volume of cold water. Filter through calico, and wash the residuum on the filter so long as the washings precipitate with ammonia. Unite the filtered liquor with the washings, and add an excess of ammonia. Collect the precipitate on a filter, wash it slightly with cold water, and dry it first by imbibition with filtering-paper, and then in the vapour-bath. A small additional quantity may be got by concentrating the filtered ammoniacal fluid, and allowing it to cool.

Veratria thus obtained is not pure, but sufficiently so for medical use. From this coloured substance it may be obtained white, though at considerable loss, by solution in very weak muriatic acid, decolorization with animal charcoal, and re-precipitation with ammonia.

Use.—It is employed in neuralgic diseases.

Dose.—One-twelfth of a grain.

SYNONYME.

Sabadillin.

Verjuice. *Omphacium. Agresta.*

A kind of rough vinegar, made of the expressed juice of the wild apple or crab. The French apply these names to the sour liquor obtained by the expression of unripe grapes.

Verjuice was formerly much esteemed as a cooling astringent medicine; it is still occasionally used, principally as an external application, and in making some sauces.

Vermicelli.

A preparation of wheaten flour, those kinds of flour being selected which are richest in gluten. When common flour is used an additional quantity of gluten from which the starch has been separated is obliged to be added. This is made into a paste, which is subsequently forced through small circular holes, giving it the form of wires.

It is principally used for thickening soups.

Vinegar (see page 579).

Is employed as the menstruum for extracting the active constituents of certain spices and condiments used in cooking, and other branches of domestic economy.

Camp vinegar.

℞ Garlic, sliced	. . . .	℥viij.
Cayenne pepper,		
Soy,		
Walnut catsup	. . .	āā ℥iv.
Chopped anchovies	. . .	No. 36.
Vinegar	. . . . .	cong. j.
Cochineal	. . . . .	℥j.

Macerate for a month, and strain.

Currie vinegar.

℞ Currie powder . . . . . ℔ss.
Vinegar . . . . . Oiv.
Macerate for 14 days, and strain.

Raspberry vinegar. Vinaigre framboise.

Codex, Ph. Franç. 1839.

℞ Fresh raspberries, picked from their calices . . . . . ℔iij.
Good vinegar . . . . . ℔ij.
Macerate in a glass vessel for a fortnight, then filter without pressing.

Other similar fruit may be used in the same way.

Rose vinegar. Vinaigre rosat.

Codex, Ph. Franç. 1839.

℞ Dried red-rose petals . . . ʒj.
Good vinegar . . . . . ʒxij.
Macerate for 8 days, shaking them from time to time; then press and filter.

VINUM ABSINTHII. *Wine of wormwood.*

Codex. Ph. Franç. 1839.

℞ Dry leaves of wormwood. 32 parts.
Good white wine . . 1000 „
Spirit of wine (sp. gr. ·862) 32 „
Cut the wormwood, moisten it with the spirit: let them macerate for 24 hours, then add the wine, and macerate for 2 days; finally, strain, press, and filter.

VINUM ALOES. *Wine of aloes.*

Lond. Ph. 1851.

℞ Socotrine, or hepatic aloes, in powder . . . . . ʒij.
Powdered canella . . . . ʒiv.
Sherry wine . . . . . Oij.
Macerate for 7 days, and strain.

Edin. Ph. 1841.

℞ Socotrine, or East Indian aloes ʒiss.
Cardamom seeds, ground,
Ginger, in coarse powder āā ʒiss.
Sherry . . . . . Oij.
Digest for 7 days, and strain through linen or calico.

Med. Use.—Purgative and stomachic.

Dose.—fʒj. to ʒij. as a purge; ʒj. to ʒij. as a stomachic.

SYNONYMES.

Tinctura hieræ.—Ph. Lond. 1721.

Tinctura sacra.—Ph. Lond. 1746.

VINUM ALOES ALKALINUM. *Alkaline wine of aloes.*

Ph. Castr. Ruthena, 1840.

℞ Myrrh . . . . . ʒvj.
Carbonate of soda . . . ʒiij.
Carbonate of ammonia . . ʒivss.
Extract of aloes . . . . ʒvj.
Spanish wine . . . . ℔ij.
Macerate for 7 days, and strain.

VINUM ANTIMONII POTASSIO-TARTRATIS. *Wine of potassio-tartrate of antimony.*

Lond. Ph. 1851.

℞ Crystals of potassio-tartrate of antimony . . . . ℈ij.
Sherry wine . . . . Oj.
Rub the crystals to powder, and dissolve them.

Edin. Ph. 1841.

Vinum antimoniale.

℞ Tartar-emetic . . . . ℈ij.
Sherry . . . . . Oj.
Dissolve the salt and the wine.

Dubl. Ph. 1850.

Antimonii tartarizate liquor (see page 799).

Med. Use.—Emetic and diaphoretic, according to the dose employed.

Dose.—From fʒij. to fʒj. in teaspoonfuls every 5 minutes, to produce vomiting in children: to adults fʒij. diluted with water, and given at intervals of 8 or 10 minutes. As a diaphoretic from ʒj. to ʒij.

Codex, Medic. Hamberg, 1845.

Vinum antimonii. Wine of antimony.

℞ Emetic tartar . . . . gr. xxiv.
Spanish wine . . . . ℔j.
Mix.

Ph. Borussica, 1847.

℞ Potassio-tartrate of antimony . . . . . gr. xxiv.
Madeira wine . . . . ℥xij.

Dissolve the antimony in the wine, filter, and keep it in well-stopped vessels.

Note.—It should be clear and of a brownish-yellow colour.

Vinum benedictum.

Lond. Ph. 1721.

℞ Crocus metallorum. . . ℥iss.
Sherry wine . . . . ℔iss.

Macerate and strain.

Vinum camphoratum. *Camphorated wine.*

Ph. Borussica, 1847.

℞ Camphor, powdered,
Gum-arabic . . . . āā ʒij.
French white wine . . . ℔j

Add the wine gradually to the camphor and gum-arabic thoroughly mixed.

Note.—It should be a turbid solution of a whitish colour.

Vinum cinchonæ. *Vin de quinquina. Cinchona wine.*

Codex, Ph. Franç. 1839.

℞ Cinchona bark (pale) . . 64 parts.
Proof spirit . . . . 125 „
Good red wine (French) 1000 „

Bruise the bark; add to it the spirit, and let them macerate for 24 hours; then add the wine; macerate for 8 days, shaking it from time to time, and strain, press, and filter.

Vinum colchici. *Wine of meadow saffron.*

Lond. Ph. 1851.

℞ Meadow saffron cormus, dried . ℥viij.
Sherry wine . . . . . Oij.

Macerate for 7 days, and strain.

Edin. Ph. 1841.

℞ Colchicum-bulb, dried, and sliced . . . . . ℥viij.
Sherry . . . . . Oij.

Digest for 7 days, strain, express strongly the residuum, and filter the liquors.

Med. Use.—Diuretic and sedative; sometimes purgative—in gout, rheumatism, and all inflammatory affections.

Dose.—fʒss. to fʒj. in any suitable vehicle.

Ph. Borussica, 1847.

Vinum radicis colchici. Wine of the cormus of meadow saffron.

℞ Meadow saffron cormus fresh, sliced . . . . . ʒij.
Madeira wine . . . . . ℥iv.

Macerate for 8 days; then press and strain.

Note.—It should be of a yellowish-brown colour.

Vinum colchici seminis. *Wine of colchicum seeds.*

U. S. Ph. 1850.

℞ Colchicum seeds, bruised . . ʒiv.
White wine . . . . . Oij.

Macerate for 14 days, with occasional agitation; then express and filter through paper.

Ph. Borussica, 1847.

Vinum seminis colchici. Wine of the seeds of meadow saffron.

℞ Meadow saffron seeds, coarsely powdered . . . . . ℥v.
Madeira wine . . . . . ℔ij.

Macerate for 8 days; then press it and strain.

Note.—It should be of a yellowish-brown colour.

Vinum cydoniorum. *Quince wine.*

Ph. Austriac. 1774.

℞ Juice of quince, clarified . . ℔j.
White sugar . . . . . ʒij.

Put them into a bottle, the mouth of

which is slightly stopped with paper, and let them stand for a few days to ferment; then keep the fermented liquor in a bottle, with a little oil floating on the surface of it.

Vinum ergotæ. *Wine of ergot of rye.*

U. S. Ph. 1850.

℞ Ergot, bruised . . . . . ℥ij.
White wine . . . . . Oj.

Macerate for 14 days, with occasional agitation; then express, and filter through paper.

Vinum ferri. *Wine of iron. Steel wine.*

Lond. Ph. 1851.

℞ Iron wire . . . . . ℥j.
Sherry wine . . . . . Oij.

Digest for 30 days, and strain.

This preparation, the process for which underwent several changes in previous pharmacopæias, was omitted from that of 1836, but has been restored in 1851. The present process is similar to that of 1809, a much better process than that given in 1824.

Lond. Ph. 1809.

℞ Iron filings . . . . . ℥ij.
Sherry wine (old measure) . Oij.

Macerate for a month, occasionally shaking it, then filter.

Note.—This, which is a good formula, was first introduced in 1788.

Lond. Ph. 1824.

℞ Iron filings . . . . . ℥j.
Cream of tartar . . . . ℥vj.
Water . . . . . f℥j.

Mix, and expose them to the air, kept moist, and daily stirred for 6 weeks; then dry, and powder the residue, and dissolve it in

Distilled water . . . . Oiss.
Proof spirit . . . . . Oj.

Note.—This is a bad formula. The solution undergoes decomposition soon.

Lond. Ph. 1746.

℞ Iron filings . . . . . ℥iv.
Cinnamon,
Mace . . . . . āā ℥ss.
Rhenish wine, Oiv. (old measure.)

Macerate without heat, for a month, frequently shaking it, then filter.

Codex Medic. Hamberg, 1845.

℞ Iron filings . . . . . ℥ij.
Cinnamon . . . . . ℥j.
Hock wine . . . . . ℔ij.

Macerate for 6 days, and strain.

Ph. Græca, 1837.

℞ Iron filings . . . . 2 parts.
Cinnamon . . . . 1 part.
White wine . . . . 24 parts.

Macerate for some days, and filter.

Vinum ferri citratis. *Wine of citrate of iron.*

Beral.

℞ Citrate of iron . . . . ℥ss.
Chablis wine . . . . . ℥xxx.

Mix.

Vinum gentianæ. *Wine of gentian.*

Edin. Ph. 1841.

℞ Gentian, in coarse powder . ℥ss.
Yellow bark, in coarse powder . . . . . ℥j.
Bitter orange-peel, dried and sliced . . . . ℥ij.
Canella, in coarse powder . ℥j.
Proof spirit . . . . . f℥ivss.
Sherry . . . . . Oj. & f℥xvj.

Digest the root and barks for 24 hours in the spirit; add the wine, and digest for 7 days more; strain, and express the residuum strongly, and filter the liquors.

Med. Use.—An aromatic tonic, useful in dyspepsia and anorexia.

Dose.—℥ij. to ℥ss.

Codex, Ph. Franç., 1839.

℞ Gentian root . . . . 32 parts.
Proof spirit (sp. gr. ·924) 64 „
Red wine (French) . 1000 „

Macerate the gentian root with the spirit for 24 hours; then add the wine, macerate for 8 days, in a close vessel, and strain.

Vinum granatorum. *Pomegranate wine.*

Ph. Austriac., 1776.

℞ Juice of pomegranate fruit, clarified . . . . . ℔j.
White sugar . . . . . ʒij.

Put them into a bottle, partly close the mouth of the bottle with a piece of paper, and let them stand for a few days to ferment; then keep the fermented liquor in a bottle, with a little oil floating on the surface of it.

Vinum ipecacuanhæ. *Wine of ipecacuanha.*

Lond. Ph. 1851.

℞ Ipecacuanha, bruised . . . ʒiiss.
Sherry wine . . . . . Oij.

Macerate for 7 days, and strain.

Edin. Ph. 1841.

℞ Ipecacuan, in moderately-fine powder . . . . . ʒiiss.
Sherry . . . . . Oij.

Digest for 7 days, and then filter.

Dubl. Ph. 1850.

℞ Ipecacuan, in coarse powder . ʒiiss.
Sherry wine . . . . . Oij.

Macerate for 14 days, with occasional agitation; then strain with expression, and filter.

Med. Use.—A good emetic for infants, and preferable to antimonials; as a diaphoretic, in diarrhœa and dysentery.

Dose.—For the former purpose, fʒiv. to fʒx. in divided doses; for the latter, from ♏x. to ♏xxx. in some suitable vehicle.

Vinum opiatum, commonly called *Rousseau's laudanum.*

Ratier and Henry's Ph. Fran.

℞ White honey, 5670 Tr. grains, or . . . 375 parts.
Hot water, 17011·5 Tr. gr. or . . . . 1500 „

Pour the mixture, when melted, into a matrass, and put it in a warm place. As soon as it begins to ferment, add

Pure opium, 1890 Tr. gr., or . . . . 128 parts.
Previously dissolved in 5670 Tr. gr. of water, or . . . . 384 „

Let the whole ferment for a month in a place, the temperature of which should be 86° F.

Then strain and filter the liquor, and evaporate until only 4725 Tr. gr. remains, or . . 320 parts.

Next strain, and add of

Alcohol (D. 923 to 867) 2126·25 Tr. gr. or . 144 „

Preserve in a well-stopped vessel.

Vinum opii. *Wine of opium.*

Lond. Ph. 1851.

℞ Extract of opium . . . . ʒiiss.
Cinnamon, bruised,
Cloves, bruised . . . āā ʒiiss.
Sherry wine . . . . . Oij.

Macerate for 7 days, and strain.

Edin. Ph. 1841.

℞ Opium . . . . . ʒiij.
Cinnamon, in moderately-fine powder,
Cloves, bruised . . . . āā ʒiiss.
Sherry . . . . . Oij.

Digest for 7 days, and then filter.

Dubl. Ph. 1850.

℞ Opium, in coarse powder . . ʒiij.
Sherry wine . . . . . Oij.

Macerate for 14 days, with occasional agitation; then strain with expression, and filter.

Med. Use.—Its effects are similar to those of the tincture of opium.

Dose.—Gtt. x. to fʒj.

SYNONYMES.

Laudanum liquidum Sydenhami.—Lond. Ph. 1721.
Tinctura thebaica.—Lond. Ph. 1746.
Sydenham's laudanum.

Vinum quinæ. *Quinine wine.*

Dr. Collier.

℞ Disulphate of quina . . gr. xxiv.
Citric acid . . . . gr. xviij.
Genuine orange wine . f℥xxiv.
Dissolve.
Dose.—A dram-glassful or more.

Vinum rhei. *Rhubarb wine.*

Edin. Ph. 1841.

℞ Rhubarb, in coarse powder . . . . ℥v.
Canella, in coarse powder . . . . . ʒij.
Proof spirit . . . . f℥v.
Sherry . . . . . Oj. & f℥xv.
Digest for 7 days; strain, express strongly the residuum, and filter the liquors.

Dubl. Ph. 1850.

℞ Rhubarb, in coarse powder . ℥iij.
Canella, in coarse powder . ʒij.
Sherry wine . . . . . Oij.
Macerate for 14 days, with occasional agitation; then strain with expression, and filter.
Med. Use.—Stomachic and purgative.
Dose.—ʒij. to ℥j.

Ph. Belgica, 1823.

Vinum rhei. Wine of rhubarb.

℞ Rhubarb root, bruised . . . ℥ij.
Cardamom seeds . . . . ʒj.
Rectified spirit . . . . . ℥ij.
Sherry . . . . . ℔j.
Macerate for 7 days, and strain.

Vinum rhei amarum.

Ph. Suecica, 1845.

℞ Canella bark . . . . . ʒj.
Gentian . . . . . ʒij.
Rhubarb . . . . . ℥j.
Malaga wine . . . . . ℥x.
French brandy . . . . . ℥ij.
Macerate for 4 days, and strain.

Vinum rhei aromaticum.

Ph. Suecica, 1845.

℞ Cardamoms . . . . . ℥ss.
Rhubarb . . . . . ℥iss.
Raisins, stoned . . . . ℥iij.
Malaga wine . . . . . ℥xv.
French brandy . . . . ℥iij.
Macerate for 4 days, then strain and add
Mace . . . . . ʒss.
Bicarbonate of potash . . ʒj.
Extract of elecampane . . ʒss.
Sugar . . . . . ℥i
Mix.

Vinum scilliticum. *Wine of squills.*

Lond. Ph. 1721.

℞ Squills, dried . . . . ℔j.
French white wine . . . ℔viij.
Macerate for 14 days, and filter.

Codex, Ph. Franç., 1839.

℞ Squills, dried. . . . . ℥j.
Malaga wine . . . . . ℥xvj.
Macerate for 12 days, and strain.

Vinum scilliticum amarum. *Bitter wine of squills.*

Codex, Ph. Franç., 1839.

℞ Pale cinchona bark . . 64 parts.
Winter's bark . . . . 64 „
Lemon peel . . . . . 64 „
Root of German contrayerva . . 16 „
„ Angelica . . 16 „
Squills . . . . . 16 „
Leaves of wormwood . . 32 „
„ balm . . . 32 „
Juniper berries . . . 16 „
Mace . . . . . 16 „
White wine . . . 1000 „
Macerate for 4 days, press, and strain.

Vinum sennæ compositum. *Compound wine of sennæ.*

Ph. Suecica, 1845.

℞ Coriander seeds . . . . ʒij.
Fennel seeds . . . . ʒij.
Senna . . . . . ℥iv.
Malaga wine . . . . ℔iiss.

Macerate for 3 days, then add
Raisins, stoned . . . . ℥iij.
Macerate for 1 day, and strain.

Vinum stramonii. *Wine of stramonium.*

Codex Medic. Hamberg., 1845.

℞ Stramonium . . . . . ℥ij.
Spanish wine . . . . . ℥viij.
Rectified spirit . . . . ℥j.
Macerate for 3 days, and strain ℥viij.

Vinum tabaci. *Wine of tobacco.*

Edin. Ph. 1841.

℞ Tobacco . . . . . ℥iiss.
Sherry wine . . . . . Oij.
Digest for 7 days, strain, express strongly the residuum, and filter the liquors.

Med. Use.—Sedative and diuretic; but rarely used.

Dose.—Min. x. to min. xl.

Vinum veratri. *Wine of white hellebore.*

Lond. Ph. 1851.

℞ White hellebore, sliced . . ℥viij.
Sherry wine . . . . . Oij.
Macerate for 7 days, and strain.

Med. Use.—Given in gout, combined with opium.

Dose.—Min. v. to min. x.

SYNONYME.

Tinctura veratri albi.

Wafers. *Flour wafers, for sealing letters, &c.*

Mix fine flour into a smooth pulp with water, add red lead, dichromate of lead, or other colouring matter, to give the required colour; pass the mixture through a sieve, pour some of it into the *wafer-irons*, previously warmed and greased, then having closed the irons, expose them to the gentle heat of a charcoal fire until the wafer is dried. The small wafers are subsequently cut out of this large sheet with a steel punch.

Gelatine wafers.

℞ Best glue or gelatine . . . ℔j.
White sugar . . . . . ℥j.
Water . . . . . q. s.
Dissolve with heat; colour it with prepared cochineal, French berries, saffron, turmeric, indigo, or other colouring matter; run it out in a thin layer over a glass or metallic slab, slightly oiled, and when cold, cut it with a punch, or stamp it with an impression.

Wafer-paper.

This is an article of confectionary, which has been recently applied to pharmaceutical use.

Mix very fine wheat flour into a thin batter with milk, or a mixture of cream and water; add a little white wine and sugar, so as to make the mixture about the consistence of syrup; put some of the mixture into the *wafer-irons*, previously warmed and oiled, and expose them to the gentle heat of a charcoal fire for a few minutes, or until the wafer is dry.

The *wafer-irons* consist of two plates of iron, united like a pincers or pair of tongs, and, when brought together, having a space between their opposed surfaces suitable for the thickness of the wafers.

Med. Use.—These wafers are used for administering nauseous medicines, such as powders or electuaries; the wafer being moistened with water and the medicine enveloped in it.

Wines, British.

The following is the process adopted in making wine from the fruits of this country.

The fruit should be gathered when ripe, and, if possible, in dry weather; it should be picked over, to remove stalks &c., and to reject any that is unsound. It is then well bruised in a tub or other suitable vessel, put into a vat with the specified quantity of water, and allowed to macerate for about 24 hours, being stirred up from time to time. At the expiration of this time, the liquid is drawn off, and

the fruit pressed in hair bags. The *must* is now to be boiled for a few minutes, and skimmed; the sugar is then to be added, and cream of tartar, if ordered, and when the liquor has cooled to about 75° Fahr., it is to be put into the cask, together with the yeast, and left in a moderately warm, quiet place to ferment. When the fermentation has commenced, any ingredients used merely for flavouring it should be added. The process of fermentation usually occupies from 14 to 20 days, at the expiration of which time the spirit is to be added, and the wine bunged up and left for about 3 months, when it may be bottled for use;—or it may be bottled when the spirit is added, and kept for 3 months before being used.

The foregoing process is to be adopted with the following wines, excepting where otherwise directed:—

Currant wine.

No. 1.

℞ Red currants . . . 70 lbs.
Brown sugar . . . 10 lbs.
Water, sufficient to make 15 gallons.
Brandy . . . . 2 bottles.
Made according to directions above.

No. 2.

℞ White currants,
Red currants, . . āā 40 lbs.
Water, q. s. for. . . 15 gallons.
Brown sugar . . . 10 lbs.
Brandy . . . . . 2 bottles.
Made according to directions above.

No. 3.

℞ Black currants . . 70 lbs.
Brown sugar . . . 10 lbs.
Water, q. s. for . . 15 gallons.
Brandy . . . . 2 bottles.
Made according to directions above.

Cherry wine.

℞ Cherries . . . . 70 lbs.
Brown sugar . . . 10 lbs.
Water, q. s. for . . 15 gallons.
Brandy . . . . 2 bottles.
Made according to directions above.

Champagne, British.

℞ Brown sugar . . . 10 lbs.
White sugar . . . 12 lbs.
Water . . . . . 9 gallons.
Tartaric acid . . . ℥vj.
Dissolve; heat the liquor to 75°; add yeast, and when the fermentation has commenced,
Perry . . . . . 1 gallon.
Brandy . . . . . Oiij.
Bottle it before the fermentation has ceased.

Cider.

The juice of apples obtained by pressure, fermented at a temperature of about 60° Fah. The quality of the cider depends on the kind of apples used, and the manner in which the fermentation is conducted.

Cowslip wine.

℞ White sugar . . . 21 lbs.
Water . . . . . 7 gallons.
Dissolve it, set it to ferment, then add,
Cowslip flowers, picked 7 gallons.
Seville oranges, sliced No. 12.
Brandy . . . . . 1 bottle.
Proceed according to directions at p. 1023.

Elder wine.

℞ Elder berries . . . 12 gallons.
Boiling water . . . 8 gallons.
Sugar . . . . . 40 lbs.
Clove . . . . . ℥iv.
Ginger . . . . . ℥xij.
Brandy . . . . . 2 bottles.
Made according to directions at p. 1023.

Ginger wine.

℞ Sugar . . . . . 12 lbs.
Water . . . . . 3½ gallons.
Ginger . . . . . ℥iv.
Boil them together for half an hour; when cooled to 75°, add the rinds of 6 lemons, and some good yeast; let it ferment for 10 or 14 days, then add a pint of brandy, and bottle it for use.

Gooseberry wine.

℞ Gooseberries . . .	70 lbs.
Brown sugar . . .	10 lbs.
Water, q. s. for . .	15 gallons.
Brandy	2 bottles.

Made according to directions at p. 1023.

Grape wine.

℞ Grapes	70 lbs.
Sugar	10 lbs.
Water, q. s. for . .	15 gallons.
Brandy	2 bottles.

Made according to directions at p. 1023.

Lemon wine.

℞ Raisins	2 lbs.
Brown sugar . . .	2 lbs.
Water	2 gallons.
Lemons, sliced . . .	No. 4.

Made according to directions at p. 1023.

Orange wine.

℞ Juice of 100 Seville oranges,	
Outside rind of 52 Seville oranges.	
White sugar . . .	23 lbs.
Water	10 gallons.
Brandy	2 bottles.

Made according to directions at p. 1023.

Poppy wine. Post.

This is made by fermenting poppy capsules with sugar, in the same way as the other wines above described. It is said to be used in India, and to be highly intoxicating and narcotic.

Perry.

The juice of pears, obtained by pressure, fermented at a temperature of about 60° Fahr., the same process being adopted as that for making cider.

Raisin wine.

℞ Malaga raisins . . .	8 lbs.
Water	1 gallon.

Boil together, and proceed according to the directions at p. 1023.

Wolfram.

An ore of tungsten.

Xyloidine.

A highly-combustible body obtained by dissolving starch in strong nitric acid, sp. gr. 1·5, with the aid of a gentle heat, and then adding water, which precipitates the xyloidine in the form of a white powder. A substance possessing similar properties is obtained on immersing white paper in nitric acid of the above density, for 5 or 10 minutes, and then washing it with water and drying it. These substances burn rapidly with a yellowish-white flame, but are not explosive.

Gun-cotton was at first supposed to be identical in composition with xyloidine. It is obtained by a similar process, cotton being substituted for paper or starch. If clean carded cotton be immersed for 2 or 3 minutes in a large quantity of the strongest nitric acid, sp. gr. 1·52, then well washed in water, and dried by the heat of a water-bath, it will be converted into *gun-cotton*. The following, however, is the best process for making it:—

Mix 2 parts of nitric acid, sp. gr. 1·5, and 1 part of oil of vitriol, sp. gr. 1·845; immerse clean and dry carded cotton in the mixture for 2 minutes, then take it out, press it (to remove adhering acid), wash it in a current of water until all free acid is removed, and dry it by the heat of a water-bath.

Gun-cotton thus prepared is highly explosive, igniting at a temperature a little above 212° Fahr.

Yeast. *Ferment. Barm.*

An azotised substance formed during the process of fermentation, and capable of inducing fermentation in saccharine solutions.

Artificial yeast.

No. 1.

Fownes.

Mix wheat flour into a thick paste with water; keep it slightly covered in a mo-

derately warm place; in about 3 days it begins to emit a little gas, and to exhale a disagreeable, sour odour; after 2 or 3 days more the smell changes, and is accompanied by a distinct vinous odour; it is now in a state fit for exciting vinous fermentation.

No. 2.

℞ Honey	℥v.
Cream of tartar	℥j.
Malt	℥xvj.
Water, at 122° Fahr. . .	Oiij.

Stir well together, and allow the whole to rest for 2 or 3 hours, or until the temperature sinks to 65° Fahr., at which it must be kept covered over, until fermentation takes place and yeast is formed.

No. 3.

Boil 4 ounces of bean flour in 6 quarts of water for half an hour; mix the decoction with 3½ pounds of wheat flour; when the temperature is at 55° Fahr. add 2 quarts of beer yeast; mix them well together, and keep the mixture at the above temperature until it ferments. When fermentation has continued for 24 hours, add 7 pounds of barley or bean flour, make it into a uniform dough by kneading it, roll it out as thin as a dollar, and cut it with the top of a wine-glass into small cakes, which are to be placed on a sieve and dried in the sun. These may be kept in a dry place, and used when required.

For Use.—Mix 1 of the cakes with warm water, and set it in a warm place for 12 hours, when it may be used as yeast.

Zaffre.

Cobalt ore, deprived of sulphur and part of the arsenic by roasting, then ground to fine powder, and mixed with siliceous or quartzose sand. It is chiefly imported from Saxony. It is largely used in Staffordshire and elsewhere for making the blue colour employed for painting on porcelain, and in enamels.

Zincum. *Zinc. Symb.* Zn. *Equiv.* 32·6.

A white or bluish-white metal, occurring in nature in the state of oxide, carbonate, and sulphuret. It is obtained from one or other of these compounds. Its sp. gr. is 6·8 to 7·2 It melts at 773°; at a temperature of 600°; it is so brittle as to admit of being easily powdered. *Powdered* or *granulated zinc* is obtained by rubbing it in a mortar when at the last-named temperature.

Lond. Ph. 1851.

Its specific gravity is 6·86. It is soluble in nitric acid. What is thrown down by ammonia is again dissolved when the same is added in excess.

SYNONYMES.

Spelter. *Indian tin.* *Golden marcasite.*

Zinci acetas. *Acetate of zinc.*

Dubl. Ph. 1850.

℞ Acetate of lead	℔j.
Sheet zinc	℥iv.
Distilled water	Oiiss.
Solution of chlorinated lime, a sufficient quantity.	

Dissolve the acetate of lead in the water, and, having placed the solution in a cylindrical jar, immerse in it the zinc rolled into a coil. After the lapse of 24 hours decant the liquid, and, having reduced it by evaporation to 15 ounces, drop into it, while boiling hot, the solution of chlorinated lime, until a reddish precipitate ceases to form. It is now acidulated by the addition of a few drops of acetic acid, and evaporated down to 10 fluidounces, when, upon cooling, crystals will form. These, and any additional crystals obtained by the concentration of the mother-liquor, should be dried on blotting-paper placed on a porous brick, and then preserved in a well-stopped bottle.

Med. Use.—Used as a topical astringent in ophthalmia; and may be used in the same cases as the sulphate.

Dose.—Gr. j. to gr. iij.

Zinci carbonas. *Carbonate of zinc.*

Dubl. Ph. 1850.

℞ Solution of chloride of zinc	Oj.
Crystallized carbonate of soda of commerce	℔ij.
Boiling distilled water	Ovj.

To the carbonate of soda dissolved in the water, add the solution of chloride of zinc, in successive portions, and boil until gas ceases to be evolved. Collect the precipitate on a calico filter, and, having poured on distilled water until the washings cease to cause turbidity when dropped into a solution of nitrate of silver containing free nitric acid, dry the product, first on blotting-paper placed on a porous brick, and finally by a steam or water heat.

Med. Use.—In the form of ointment; desiccative and healing.

Zinci chloridum. *Chloride of zinc.*

Lond. Ph. 1851.

℞ Hydrochloric acid	Oj.
Distilled water	Oij.
Zinc broken in small pieces	℥vij.

Mix the acid with the water, and to these add the zinc; and, effervescence being nearly finished, apply heat until bubbles cease to be evolved. Pour off the liquor, strain, and evaporate until the salt be dried. Having melted this in a lightly-covered crucible by a red heat, pour it out on a flat and smooth stone. Lastly, when it has cooled, break it into small pieces, and keep it in a well-stoppered vessel.

Free from colour, it deliquesces if exposed to the air; is soluble in water and in rectified spirit. From the watery solution, hydrosulphuric acid or ferrocyanide of potassium being dropped in, a precipitate is thrown down. What is thrown down by ammonia or potash from the same solution is white, and this is again dissolved by the addition of either precipitant in excess; moreover, what is precipitated by the addition of the carbonate of either ammonia or potash is white, but is not again dissolved when these are added in excess.

Dubl. Ph. 1850.

℞ Solution of chloride of zinc (see next formula), any convenient quantity.

Evaporate it down in a porcelain capsule, so far that, upon suffering the residual liquor to cool, it solidifies. Subdivide the product rapidly into fragments, and enclose them in a well-stopped bottle.

Med. Use.—A powerful caustic.

SYNONYME.

Butter of zinc.

Zinci chloridi liquor. *Solution of chloride of zinc.*

℞ Sheet zinc	℔j.
Muriatic acid of commerce, Water, of each	Oiiss.

Or as much as may be sufficient.

Solution of chlorinated lime	f℥j.
Prepared chalk	℥j.

To the zinc, introduced into a porcelain capsule, gradually add the muriatic acid, applying heat, until the metal is dissolved. Filter the liquid through calico, and, having added to it the solution of chlorinated lime, concentrate at a boiling temperature, until it occupies the bulk of one pint. Permit the solution now to cool down to the temperature of the air, place it in a bottle with the chalk, and, having first added distilled water, so that the bulk of the whole may be a quart, shake the mixture occasionally for 24 hours. Finally, filter, and preserve the product in a well-stopped bottle.

The specific gravity of this liquor is 1593.

Zinci cyanidum. *Zincum hydrocyanicum. Cyanide of zinc.*

Codex, Ph. Franç., 1839.

Dissolve sulphate of zinc in water, and add to it a solution of cyanide of potas-

sium as long as a precipitate is formed, stirring the mixture constantly with a rod. Collect, wash, and carefully dry the precipitate.

Ph. Badensia, 1841.

Dissolve carbonated oxide of zinc in concentrated acetic acid diluted with an equal quantity of water, then add prussic acid as long as a precipitate is formed, which is to be washed, and dried at a common temperature.

Note.—A white, tasteless powder, free from smell. Insoluble in water and spirit. Soluble in somewhat diluted sulphuric or muriatic acid, developing prussic acid.

Dose.—Quarter of a grain.

Zinci ferrocyanidum. *Zincum ferroso-hydrocyanicum. Ferrocyanide of zinc.*

Add a solution of ferrocyanide of iron to solution of sulphate of zinc, and collect, wash, and dry the precipitate.

Dose.—Half a grain to 1 grain.

Codex Medic. Hamburg., 1845.

Zincum ferroso-hydrocyanicum.

℞ Prussiate of potash . . . ℥j.
Distilled water . . . . ℔j.
Dissolve.

℞ Sulphate of zinc . . . ℥iss.
Distilled water . . . . ℥vj.
Dissolve.

Mix the solutions, wash, and dry the precipitate.

Note.—White, tasteless, and insoluble in water.

Dose.—Gr. ij.

Zinci iodidum. *Iodide of zinc.*

Made in the same way as iodide of iron, substituting zinc for iron.

Zinci lactas. *Lactate of zinc.*

Made in the same way as lactate of iron, substituting zinc for iron.

Zinci oxydum. *Oxide of zinc.*

Lond. Ph. 1851.

℞ Sulphate of zinc . . . . ℔j.
Sesquicarbonate of ammonia ℥viss.
Distilled water . . . . Cong. iij.

Dissolve the sulphate of zinc and sesquicarbonate of ammonia, separately, in 12 pints of distilled water, and strain; then mix. Wash what is precipitated frequently with water; and lastly, burn it for 2 hours in a strong fire.

Pulverulent, yellowish-white; is soluble in ammonia, potash, and hydrochloric acid.

Edin. Ph. 1841.

℞ Sulphate of zinc . . . ℥xij.
Carbonate of ammonia . . ℥vj.

Dissolve each in 2 pints of water; mix the solutions; collect the precipitate on a filter of linen or calico; wash it thoroughly; squeeze and dry it, and expose it for 2 hours to a red heat.

Note.—White, tasteless, entirely soluble in diluted nitric acid without effervescence; this solution is not affected by nitrate of baryta, but gives with ammonia a white precipitate entirely soluble in an excess of the test.

Dubl. Ph. 1850.

℞ Carbonate of zinc, any convenient quantity.

Place it in a clay crucible furnished with a cover, and expose it to a very low red heat until a portion of the contents of the crucible, taken from the centre, ceases to effervesce on being dropped into dilute sulphuric acid.

Use.—Externally, in preparing the oxide of zinc ointment. Internally, as a tonic in epilepsy, chorea, and hooping-cough.

SYNONYMES.

Oxide of zinc, prepared by combustion, was formerly known by the names *Pompholix*, *Nil*, *Nihil*, *Nihili album*, *Lana philosophici*, *Philosopher's wool*, *Flowers of zinc*, *Zincum calcinatum*.

ZINCI SULPHAS. *Sulphate of zinc.*

Lond. Ph. 1851.

Note.—It is soluble in water. The precipitate with ammonia is white, but is redissolved if the test be added in excess. What is thrown down by either chloride of barium or acetate of lead is not dissolved by dilute nitric acid. What is precipitated from 100 grains dissolved in water by sesquicarbonate of ammonia, is reduced, at a high temperature, to 27·9 grains of oxide of zinc.

Edin. Ph. 1841.

This salt may be prepared either by dissolving fragments of zinc in diluted sulphuric acid until a neutral liquid be obtained, filtering the solution, and concentrating sufficiently for it to crystallize on cooling,—or by repeatedly dissolving and crystallizing the impure sulphate of zinc of commerce, until the product, when dissolved in water, does not yield a black precipitate with tincture of galls, and corresponds with the characters laid down for sulphate of zinc in the List of the Materia Medica; and exhibited in the note immediately following.

Note.—When a solution in 6 waters is boiled with a little nitric acid, and solution of ammonia is then added till the oxide of zinc first thrown down is all redissolved, no yellow precipitate remains, or a trace only, and the solution is colourless.

Dubl. Ph. 1850.

℞ Zinc, laminated, or in small fragments	℥iv.
Oil of vitriol of commerce .	f℥iij.
Distilled water	Oij.
Nitric acid of commerce,	
Dilute sulphuric acid, of each	f℥j.
Prepared chalk	ʒiij.

Place the zinc, oil of vitriol, and a pint of the water in a porcelain capsule, and, when gas ceases to be developed, boil for 10 minutes. Pass then the solution through a calico filter, and, having added to it the nitric acid, evaporate to dryness. Let the dry salt be dissolved in the remainder of the water, and let the solution when cold be shaken several times for 6 hours in a bottle with the chalk, and then cleared by passing it through a filter. It is now, after having been acidulated with the dilute sulphuric acid, to be evaporated till a pellicle begins to form on its surface, and then set to crystallize. The crystals thus obtained should be dried on blotting-paper without heat, and then preserved in a bottle. By further concentrating the solution from which the crystals have separated, an additional product will be obtained.

Uses.—Internally, tonic and astringent.

Dose.—Gr. j. to gr. ij., which may be gradually raised to gr. v.; as an emetic in the dose of from gr. x. to gr. xxx. Externally, as an astringent in the proportion of gr. x. to 8 fluidounces of water.

Remarks.—An impure sulphate of zinc, known in commerce by the names of *White vitriol*, or *White copperas*, is obtained by the oxidation of native sulphuret of zinc or blende. The sulphuret is roasted, and then exposed to the joint action of moisture and atmospheric air, under which circumstances the zinc is converted into oxide, and the sulphur into sulphuric acid, which combine to form the salt. This is separated from impurities by lixiviation and crystallization.

SYNONYMES.

Vitriolum album depuratum.—Lond. Ph. 1721.

Sal vitrioli.—Lond. Ph. 1746.

Zincum vitriolatum.—Lond. Ph. 1788.

Gilla theophrasta. White vitriol.

ZINCI VALERIANAS. *Valerianate of zinc.*

Dubl. Ph. 1850.

℞ Valerianate of soda . . .	℥iiss.
Sulphate of zinc . . .	℥ij. ʒvij.
Distilled water	Oij.

Dissolve the valerianate of soda in one-half, and the sulphate of zinc in the remain-

ing half of the water, and, having raised both solutions to 200°, mix them, and skim off the crystals which are produced. Let the solution be now evaporated at a temperature not exceeding 200°, until it is reduced to the bulk of 4 ounces, removing, as before, the crystals from the surface, in proportion as they form, and placing them with those already obtained. The salt thus procured is to be steeped for an hour in as much cold distilled water as is just sufficient to cover it, and then transferred to a paper filter, on which it is to be first drained, and then dried at a heat not exceeding 100°.

Med. Use.— Tonic, antispasmodic, and is adapted for the treatment of neuralgic affections. It has been found especially useful in facial neuralgia, hysterical neuralgia, and vertigo.

Dose.—Three-fourths of a grain to 1 grain two or three times a day.

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